D-24
Personal Computer Data Input for Nuclear Regulatory Commission Licensees

November 2008

A booklet of guidance for data submissions to
NMMSS using electronic formats

November 2008
Update to D-24

As noted in the October 15, 2008 special edition of the NMMSS News, effective October 6, 2008, users are to submit their NMMSS data to the U.S. Department of Energy's Savannah River Site. All of the following methods of transmitting data to NMMSS are operational as of October 6, 2008:

Unclassified Fax: (803) 725-9819
Classified Fax: (803) 725-9817

Surface Mail - **marked** "**MEDIA ENCLOSED - DO NOT X-RAY"**

Unclassified Mailing Address: Savannah River Nuclear Solutions
NMMSS Operations
Building 703-45A
Aiken, SC 29808

Classified Mailing Address:

Inner Envelope:
U.S. Department of Energy
Savannah River Site
ATTN: NMMSS, Intended Recipient
P.O. Box A
Aiken, SC 29802

Outer Envelope:
U.S. Department of Energy
Savannah River Site
ATTN: CO Group, 773-A, A-0260
P.O. Box A
Aiken, SC 29802

Unclassified email: NMMSS@srs.gov
SIMEX Routing: RHEGSRO
Classified Bulletin Board: (803) 725-9816
Unclassified Bulletin Board: (803) 725-9813, (803) 725-9814

NMMSS Operations Center:	(803) 725-9810
NMMSS Help Desk for NRC Licensees:	(803) 725-9811
NMMSS Help Desk for DOE Sites:	(803) 725-9812

The following Savannah River Site staff members are now part of NMMSS Operations:

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Reader's Comment Form

NMMSS Personal Computer Data Input for NRC Licensees

D-24

NMMSS welcomes comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information used for revision. Please tell us...

	Yes	*No*
Did you find any errors?	☐	☐
Is the information clearly presented?	☐	☐
Do you need more information? If so, on what subject?_____	☐	☐
Are the examples correct?	☐	☐
Do you need more examples?	☐	☐

What features did you like most about this guide?

_____
_____
_____

What features did you like least about this guide?

_____
_____
_____

If you found errors or have any other suggestions for improvement, please indicate the topic, chapter, and page number below:

_____
_____
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Please send your comments to:

U.S. Department of Energy
ATTN: NMMSS Project Director, HS.1-22
Germantown Bldg.
1000 Independence Avenue, NW
Washington, DC 20585-1290

If you would like a reply, please give your name, address, and telephone number below:

Name: _____

Address: _____

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Thank you for helping us to improve our documentation!

TABLE OF CONTENTS

1. INTRODUCTION

1.1. Reporting Guidelines

Refer to the current version of the **NRC Instructions for Completing Nuclear Materials Transaction Reports; NUREG/BR-0006** and **Instructions for Completing Material Balance Report and Physical Inventory Listing NUREG/BR-0007** for specific NRC requirements in reporting data to the NMMSS. These documents specify that data submissions may be made in acceptable electronic forms to the NMMSS and provide the information necessary for completing the source documents (forms) referenced in this directory.

NRC licensees required to report government owned material to NMMSS should refer to the **D-23, Personal Computer Data Input for Department of Energy Contractors** for guidance in the electronic reporting of this material.

1.2. Purpose

This directory provides formatting requirements for the reporting of nuclear material information in electronic file formats to the Nuclear Materials Management Safeguards System (NMMSS) in accordance with the Nuclear Regulatory Commission (NRC) guidelines. A reporting licensee has the option to prepare reported data in an electronic file using the formats presented here using a variety of word processing programs text editors, or programmatically in Material Control and Accountability Systems. This data is then saved as a text file and sent to NMMSS via diskette, CD, Zip disk, SIMEX, Direct Link, or electronic mail.

1.3. Acceptable Electronic Formats

The primary formats accepted by NMMSS for electronic data transfer are eXtensible Markup Language (XML) and 80 Column file format files created in the MSDOS or Windows based environments. New technologies are constantly being developed to improve data management. As these methods are tested and analyzed by NMMSS staff, revisions will be made to data input procedures and guidelines. Visit the NMMSS website, www.nmmss.com, for the latest information and guidelines.

A third alternative for submitting electronic data to NMMSS is the use of the Safeguards Management Software (SAMS) for transcribing reported data into a machine readable format. This software is currently available at no charge from NMMSS.

For more information concerning the individual data fields refer to the **NMMSS Report D-21, "NRC Licensee Reference Manual."**

1.3.1. Extensible Markup Language (XML) File Format

The XML format may also be referred to as tagged data as it is based upon the use of tags (words bracketed by '<' and '>') and attributes (of the form name="value"). The NMMSS XML data submission format uses specific tags to establish the limits of units of data. An advantage of using XML is that data is represented by tags which identify the values

being reported; however, these tags must be entered exactly as specified or they will not be recognizable to the import programs.

The rules for XML files are strict. The following conditions will cause a failure in an XML data import:

- **A tag entered incorrectly (For example; using the wrong tag name, inserting spaces, or using improper capitalization).**
- **A missing tag.**
- **A missing end tag indicator (designated by the /) for every opening tag.**
- **A data attribute without surrounding quotes.**

Field sizes of reported data may be adjusted to fit the value, instead of requiring additional spaces to meet the allocated size as seen in the 80 Column file formats. The reported data is entered into double quotes to the right of the attribute tag. Then, the file is saved as a text file using a file extension of **.xml** and submitted to NMMSS.

The use of the following characters inside the double quotes surrounding the value may be forced to be accepted by substituting the following code shown in the table below in place of the character. For example; to report a text comment such as Insert batch id 'Batch6a' in block 24D. The tag value would need to be expressed as "Insert batch id **'**Batch6a**'** in block 24D."

Character	Code
'	&apos;
"	&quot;
&	&amp;
<	&lt;
>	&gt;

Each type of reported data; Inventory, Transaction, and Material Balance, has specific tags as shown in more detail under each section of this document. Data codes, which are necessary to identify the data in the 80 Column file format, are inferred by the XML tag structure and therefore are not required. Refer to the individual data sections for additional details. Additional resources are available about XML online from the following websites:

- www.w3schools.com
- www.ucc.ie/xml/

1.3.2. 80 Column File Format

The 80 Column file format is a method for submitting data to NMMSS that directly correlates the columnar position of data in a text file with the related hardcopy data submission forms. In the 80 Column file format the identity of the data is interpreted by its columnar position in the file. For each type of reported data the data is entered according to a precise position within a text file that is then saved and submitted to NMMSS. Each line of data begins with basic identifying information and a data code (sometimes called a record type indicator) that indicates the type of information on the rest of the line. The repetition of the basic identifying information on each line allows the

data to be linked with the new information. Allocated spaces for each data field are constant and cannot be adjusted. See the sections in this directory for each specific type of reported data and the precise placement and format of 80 Column file.

1.4. Understanding the Format Presentation

Within each format table presented in this directory the form identifier is listed along with the block identification number or number character combination found on the form. 80 Column file formatting will list the range of columns where the corresponding block of data is to be placed within the text file. XML tables will display the tag identifier (XML attribute) to be used for this block.

The ***Type*** column defines the form and length of the accepted data. For example, 'Char(1)' indicates that the data will consist of a single character (letter or number) and 'Char(20)' indicates that the data will consist of 20 characters, letters, numbers, or any combination. Generally, character based data fields are set to the left side of the allocated columns in an 80 Column file format; i.e. left justified. 'Date' indicates the data is a calendar date and will be accepted in a specified format. 'Num(11,2)' indicates the data is restricted to numbers and has an overall length of 11 numbers of which two are to the right of the decimal. Generally, these are set to the right side of the allocated columns in an 80 Column file format; i.e. right justified. Note, that the decimal portion is a part of the number length. When the type specifies a decimal length, a value must be entered to accommodate the decimal positions. For example, if the type is specified as Num(11,2) and the number value to be submitted is the whole number 15; entering 15 into either 80 Column or XML formats will be interpreted as 0.15. **The use of decimal points is not allowed in either format**. The whole number 15 should be entered as 1500.

The ***Essential*** column indicates the minimum requirement of data for successful file import when a '✓' is present in the column. This column does not indicate the necessity of data required by the NRC to be reported; only the requirement for a successful file import into NMMSS.

The ***Note*** column lists any remarks that will indicate special instructions, such as the format to be used or a value that remains constant. Note all dates are to be entered in the format MMDDYYYY. This means that dates will be reported with their two-digit month indication followed by the two digit date indication and the four digit year. Note, also that negative numbers are generally permitted and indicated by the placement of a minus sign (-) to the left of the number. In addition, negative number values may be represented by character values. The chart for converting a negative number to a character is provided in Appendix B.

1.5. File Creation

In order to process electronic data without creating reporting errors the data must be created in data files that are free of formatting characters. Tabs are one of the formatting characters that will introduce errors into a file. Always use the space bar to create delineation between data fields. Many text editors such as Microsoft Word or Word Perfect, will add symbols to a file saved by the default method in order to maintain a finished look. This is overcome by saving the file (in any text editor) specifying the SAVE AS option and designating the file as a text file which removes the formatting characters. This will prevent most extraneous characters

from being added to the file. Always review each data file created to verify that no extraneous characters were added. An example of an 80 Column file format inventory data file that has been saved with extraneous formatting characters is shown in Example 1. The correct format using the same data is shown in Example 2.

Example 1; 80 Column data file with extraneous data that creates errors.

```
ÐÏ à¡± á > þÿ ! # þÿÿÿ ÿÿÿÿÿÿ6 ´ ¨ Š L$ Â J F ¾
6 6 ‡ 0 · 6 y ¾ y 6 Ù 101312002AAA 10 861 3329900
20900JNS456-999Y 000 J 000001
101312002AAA 10 861 992300 90020NSJ564-669Y 000 J 000001
101312002AAA E4 864 1600 1488SNS4781341Y 000 J 000003
V ¬ ûû ý 2 0 0 &P 1 F °Ð/
°à=!° "° # $ %° °Â °Â i 8 @ñÿ 8 N o r m a l CJ D @ D
$ ¤x @& 5 CJ OJ QJ aJ J @ J D e f a u l t P a r a g r a p h F o n
€˜ 0 € € ÿÿ V V p @ ÿÿ U n k ÿÿ ÿÿ ÿÿ
G ‡z € ÿ T i m e s N e w R o m a n 5
€ S y m b o l 3& ‡z € ÿ Y 000000J000001 0 - 013-
Normal.dot A- hi d- 1 ll- Microsoft Word 9.0 6@ @ 0$ Â @ 0$ Â %
Ô þÿ ÕÍÖœ. “— +,ù®0 X
```

Example 2; Same 80 Column data file without the extraneous data that cause errors.

```
101312002AAA 10 861 3329900 20900JNS456-999Y 000 J 000001
101312002AAA 10 861 992300 90020NSJ564-669Y 000 J 000001
101312002AAA E4 864 1600 1488SNS4781341Y 000 J 000003
```

A file extension should be assigned which indicates the type of file format used. For example, a file submitted in an 80 Column format may end in .txt or any other preferred variation; **an XML file should always end in .xml.**

1.6. Data Submission Methods

Contact the NMMSS staff, (803) 725-9811, for additional directions regarding the use of SIMEX, Direct Link, or electronic mail. Electronic data may be mailed through the U.S. Postal Service on electronic media to the following address.

U.S. Department of Energy
Savannah River Nuclear Solutions
NMMSS Operations, Bldg. 703-45A
Aiken, SC 29808

(For classified documents) **Refer to SIMS for a classified address**
(For unclassified documents) **Attn: NMMSS Project / Jerry O'Leary**

When mailing electronic media to NMMSS label the media with the following information:

- Licensee's RIS (Reporting Identification Symbol of the data source)
- Name and telephone number of the person to contact if there are problems or questions
- Name of the data file
- Any special instructions, comments or explanations.

Note; A printed listing of the electronic data may be included with the electronic media may expedite data processing in the event a damaged disk is received. It is not necessary to include the DOE/NRC forms when submitting data electronically to the NMMSS.

2. TRANSACTION DATA

2.1. Requirements for DOE/NRC Form 741 and Concise Notes

2.1.1. XML File Formatting

An example of transaction submission in XML format is shown below. Additional examples are shown in Appendix C along with the corresponding DOE/NRC forms.

```
<TRANSACTIONS>
  <SHIPMENT SHIPPERRIS="ABC" RECEIVERRIS="DEF" TRANSFERNUMBER="131" CORRECTION=""
PROCESSCODE="A" ACTIONCODE="A" NUMBEROFLINES="1" NATUREOFTRANSACTION="W"
SHIPPEDFORRIS="FGG" SHIPPEDTORIS="HIJ" TRANSFERAUTHORITY="" UKFLAG="N"
ACTIONDATE="12312002" LICENSENUMBER="987654321" TOTALGROSSWEIGHT="20081"
TOTALVOLUME="45645" CONCISENOTEIND="Y" SEALEDSOURCE="" TOTRANSFERAUTHORITY="">
    <CONCISENOTE LINENUMBER="1" ENTRYREFERENCE="Whole report" TEXTOFCONCISENOTE="Note text
goes here">
    </CONCISENOTE>
    <OBLIGATION LINENUMBER="1" COUNTRYCODE="32" SUMMARYMATERIALTYPE="10"
ELEMENTWEIGHT="1233300" ISOTOPEWEIGHT="99900">
    </OBLIGATION>
    <LINEITEM LINENUMBER="1" BATCH="Batch 0411h" NUMBEROFITEMS="5" BACKREFLINENUMBER="">
      <ELEMENT ELEMENTWEIGHT="45555500" ELEMENTLOE="5">
        <MATERIAL SUMMARYMATERIALTYPE="10" PROJECT="" COEILINENUMBER="809"
TYPEINVENTORYCHANGE="" OWNER="J" KEYMEASUREPOINT="W" MEASUREBASIS="E"
OTHERMEASUREPOINT="R" MEASUREMETHOD="T" GROSSWEIGHT="" NETWEIGHT="" TOPROJECT=""
TOCOEILINENUMBER="">
          <ISOTOPE WEIGHTPERCENT="16000" ISOTOPEWEIGHT="45600" ISOTOPELOE="65">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
  </SHIPMENT>
</TRANSACTIONS>
```

Root Tag <TRANSACTIONS>

Header Information <SHIPMENT>

Field Description	*741*	*XML Attribute*	*Type*	*Essential*	*Note*
Shipper RIS	1	SHIPPERRIS	Char(4)	✓	
Receiver RIS	2	RECEIVERRIS	Char(4)	✓	
Transaction/Transfer Number	3	TRANSFERNUMBER	Char(6)	✓	
Correction Number	4	CORRECTION	Char(1)		
Process Code	5	PROCESSCODE	Char(1)	✓	See Appendix A.
Action Code	6	ACTIONCODE	Char(1)	✓	
Number of Data Lines	10	NUMBEROFLINES	Num(2)	✓	
TI Code/Nature of Transaction[1]	11	NATUREOFTRANSACTION	Char(1)		
RIS For Account[2]	12b	SHIPPEDFORRIS	Char(4)		
RIS To Account[2]	13b	SHIPPEDTORIS	Char(4)		
Transfer Authority	14	TRANSFERAUTHORITY	Char(17)		

[1] Leave blank.
[2] Leave blank.

IAEA UK Reportable[3]	23c	UKFLAG	Char(1)	"R" indicates Yes "N" indicates No
Action Date	22	ACTIONDATE	Date	MMDDYYYY
License Number	15	LICENSENUMBER	Char(10)	
Total Gross Weight	24	TOTALGROSSWEIGHT	Num(10)	Whole numbers
Total Volume[4]	25	TOTALVOLUME	Num(9)	Whole numbers
Concise Note Indicator	23b	CONCISENOTEIND	Char(1)	X indicates notes
Sealed Source Serial Number[5]		SEALEDSOURCE	Char(10)	List tag only
Receiving Transfer Authority[5]		TOTRANSFERAUTHORITY	Char(17)	List tag only

Concise Note Information <CONCISENOTE>

Field Description	*740M*	*XML Attribute*	*Type*	*Essential*	*Note*
Line Number	7a	LINENUMBER	Num(2)	✓	
Entry Reference	7b	ENTRYREFERENCE	Char(16)	✓	
Concise Note Text	7c	TEXTOFCONCISENOTE	Char(39)	✓	

Obligation Information <OBLIGATION>

Field Description	*741*	*XML Attribute*	*Type*	*Essential*	*Note*
Line Number	17	LINENUMBER	Num(2)	✓	
Country	18	COUNTRYCODE	Char(2)		
Material Type	19	SUMMARYMATERIALTYPE	Char(2)	✓	
Obligated Element Weight	20	ELEMENTWEIGHT	Num(11,2)	✓	
	Do not enter a decimal point; the right-most two digits are considered decimal values.				
Obligated Isotope Weight[6]	21	ISOTOPEWEIGHT	Num(11,2)	✓	
	Do not enter a decimal point; the right-most two digits are considered decimal values.				

Detail Information <LINEITEM>

Field Description	*741*	*XML Attribute*	*Type*	*Essential*	*Note*
Back Reference Number[7]	26/27 a	BACKREFLINENUMBER	Char(3)		Adjustments Only Zero fill blanks
Line Number	26/27 b	LINENUMBER	Num(2)	✓	
Batch Name/Identification	26/27 d	BATCH	Char(16)		
Number of Items	26/27 e	NUMBEROFITEMS	Num(2)		

[3] Reporting "R" indicates that the UK data is reportable to the IAEA. Reporting "N" indicates that the UK data is not reportable to the IAEA. Leave this field blank for data that does not involve UK facilities.
[4] Report total volume in cubic feet for material transferred to or from a nuclear waste management facility (RIS beginning with "V").
[5] Sealed Source and Receiving Transfer Authority do not apply to NRC data submissions but the tag must be listed in the XML file for successful data import.
[6] Obligated Isotope Weight is required for Enriched Uranium only.
[7] Back Reference Number; the first character is the correction identifier. The second and third characters are the line number referenced. When reported, insert zeros for blank values.

Detail Information <ELEMENT>

Field Description	741	XML Attribute	Type	Essential	Note
Element Weight	26/27 n	ELEMENTWEIGHT	Num(11,2)	✓[8]	
Do not enter a decimal point; the right-most two digits are considered decimal values.					
Element Limit of Error	26/27 o	ELEMENTLOE	Num(5)		
Do not enter a decimal point; all digits are considered decimal values.					

Detail Information <MATERIAL>

Field Description	741	XML Attribute	Type	Essential	Note
Material Type	26/27 g	SUMMARYMATERIALTYPE	Char(2)	✓	
Project Number[9]	26/27 f	PROJECT	Char(10)		
Composition Facility Code	26/27 h	COEILINENUMBER	Char(4)		
Type of Inventory Change	26/27 c	TYPEINVENTORYCHANGE	Char(2)		
Owner Code	26/27 i	OWNER	Char(1)	✓	
Key Measurement Point	26/27 j	KEYMEASUREPPOINT	Char(2)		
Measurement Basis	26/27 k1	MEASUREBASIS	Char(1)		
Other Measurement Point	26/27 k2	OTHERMEASUREPOINT	Char(2)		
Measurement Method	26/27 k3	MEASUREMETHOD	Char(1)		
Gross Weight[10]	26/27 l	GROSSWEIGHT	Num(5)		
Net Weight[10]	26/27 m	NETWEIGHT	Num(5)		
Receiving Project Number [11]		TOPROJECT	Char(10)		List tag only
Receiving Composition Facility Code[11]		TOCOEILINENUMBER	Char(4)		List tag only

Detail Information <ISOTOPE>

Field Description	741	XML Attribute	Type	Essential	Note
Weight Percent Isotope/Parts Per Million	26/27 p	WEIGHTPERCENT	Num(6,4)[12]		
Do not enter a decimal point; the right-most four digits are considered decimal values.					
Isotope Weight	26/27 q	ISOTOPEWEIGHT	Num(11,2)	✓[8]	
Do not enter a decimal point; the right-most two digits are considered decimal values.					
Isotope Limit of Error	26/27 r	ISOTOPELOE	Num(5)		
Do not enter a decimal point; all digits are considered decimal values.					

* This data is required when other data is present at this level of detail.

[8] Element or Isotope weight may be essential to successful file import depending on the specified material type.
[9] Leave blank. (Required when reporting government owned material.)
[10] Gross Weight and Net Weight may be reported, but are not captured by NMMSS at this time.
[11] Receiving Project Number and Receiving Composition Facility Code do not apply to NRC data submissions but the tag must be listed in the XML file for successful data import.
[12] Weight Percent Isotope/Parts Per Million is reported as a percentage except when the material type is 70 (total uranium enriched in U-233), which is reported using 6 numeric digits and converted to decimal form by NMMSS.

2.1.2. 80 Column File Formatting

An example of a transaction submission in an 80 column file format document is shown below. Additional examples are shown in Appendix C along with the corresponding DOE/NRC forms. Note that gridlines and the numbering structure at the top are not a part of the data submission. They are provided for demonstration purposes only

```
ABC DEF  131 A A103                                                  12312002
ABC DEF  131 A A201  A BATCH ID          1          10309   J
ABC DEF  131 A A501                         42600          6610          300
ABC DEF  131 A A202  A BATCH ID          1          20309   J
ABC DEF  131 A A502                      221300          25305          5600
ABC DEF  131 A A203  A BATCH ID          1          50309   J
ABC DEF  131 A A503                         90100          99334 0        89500
ABC DEF  131 A A4                                                20081
```

Header Information (Data Code 1)

Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justified
Receiver RIS	2	5	8	Char(4)	✓	Left justified
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified
Correction Number (Change Digit)	4	15	15	Char(1)		
Process Code	5	16	16	Char(1)	✓	See Appendix A
Action Code	6	18	18	Char(1)	✓	
Data Code	-	19	19	Num(1)	✓	Value is 1
Number of Data Lines	10	20	21	Num(2)		
TI Code/Nature of Transaction[13]	11	22	22	Char(1)		
RIS For Account[14]	12	23	26	Char(4)		Left justified
RIS To Account[14]	13	27	30	Char(4)		Left justified
Transfer Authority	14	34	50	Char(17)		Left justified
IAEA UK Reportable[15]	23c	69	69	Char(1)		"R" indicates Yes "N" indicates No
Action Date	22	70	77	Date		MMDDYYYY
Concise Note Indicator	23b	80	80	Char(1)		X indicates notes

Visual representation of field placement in 80 Column File formatting of transaction header information.

741A Header Information (Data Code 1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Shipper RIS				Receiver RIS				Transfer Num						Co	PC		AC	DC	[#Line]		T	RIS For Acct				RIS To Acct													Trar

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
nsfer Authority																												U	Action Date										C

[13] Leave blank.
[14] Leave blank.
[15] Reporting "R" indicates that the UK data is reportable to the IAEA. Reporting "N" indicates that the UK data is not reportable to the IAEA. Leave this field blank for data that does not involve UK facilities.

Detail Information (Data Code 2)

Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justified Repeat for each line
Receiver RIS	2	5	8	Char(4)	✓	Left justified Repeat for each line
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified Repeat for each line
Correction Number (Change Digit)	4	15	15	Char(1)		Repeat for each line
Process Code	5	16	16	Char(1)	✓	Repeat for each line See Appendix A.
Action Code	6	18	18	Char(1)	✓	Repeat for each line
Data Code	-	19	19	Num(1)	✓	Value is 2
Line Number	26/27 b	20	21	Num(2)	✓	Zero fill blanks
Type of Inventory Change	26/27 c	22	23	Char(2)		
Batch Name/Identification	26/27 d	24	39	Char(16)		Left justified
Number of Items	26/27 e	40	43	Num(4)		Right justified
Project Number[16]	26/27 f	44	53	Char(10)		Left justified
Material Type	26/27 g	54	55	Char(2)		Left justified
Composition-Facility Code	26/27 h	56	59	Char(4)		Left justified
Owner Code	26/27 i	61	61	Char(1)		
Key Measurement Point	26/27 j	70	71	Char(2)		Left justified
Measurement Basis	26/27 k1	72	72	Char(1)		
Other Measurement Point	26/27 k2	73	74	Char(2)		Left justified
Measurement Method	26/27 k3	75	75	Char(1)		
Back Reference Number[17]	26/27 a	76	78	Char(3)		Adjustments Only Zero fill blanks

Visual representation of field placement in 80 column file formatting of transaction detail information.

741A Detail Information (Data Code 2)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Shipper RIS				Receiver RIS				Transfer Num						Co	PC		AC	DC	Line#		TIC		Batch ID																	

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
# Items			Project #										MT		Comp Code					O									KMP		Mb	OMP		Mn	B Ref#				

[16] Leave blank. (Required when reporting government owned material.)

[17] Back Reference Number; the first character is the correction identifier. The second and third characters are the line number referenced. When reported, insert zeros for blank values.

Quantitative Detail Information (Data Code 5)

Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justified Repeat for each line
Receiver RIS	2	5	8	Char(4)	✓	Left justified Repeat for each line
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified Repeat for each line
Correction Number (Change Digit)	4	15	15	Char(1)		Repeat for each line
Process Code	5	16	16	Char(1)	✓	Repeat for each line
Action Code	6	18	18	Char(1)	✓	Repeat for each line
Data Code	-	19	19	Num(1)	✓	Value is 5
Line Number	26/27 b	20	21	Num(2)	✓	
Gross Weight[18]	26/27 l	22	26	Num(5)		Right justified
Net Weight[18]	26/27m	27	31	Num(5)		Right justified
Miscellaneous Field[19]		32	35	Num(4)		
Element Weight	26/27 n	43	53	Num(11,2)	✓	Right justified
	Do not enter a decimal point; element decimal values are read from columns 52 and 53.					
Element Limit of Error	26/27 o	54	58	Num(5)		Right justified
	Do not enter a decimal point; all digits are considered decimal values.					
Weight Percent Isotope/Parts Per Million	26/27 p	59	64	Num(6,4)[20]		Right justified
	Do not enter a decimal point; weight percent isotope decimal values are read from columns 61 through 64.					
Isotope Weight	26/27 q	65	75	Num(11,2)	✓	Right justified
	Do not enter a decimal point; isotope decimal values are read from columns 74 and 75.					
Isotope Limit of Error	26/27 r	76	80	Num(5)		Right justified
	Do not enter a decimal point; decimal is determined by material description.					

Note: If <u>both</u> the element weight and isotope weight are zero, there is no need to submit a data line for data code 5.

Visual representation of field placement in 80 Column File formatting of transaction detail information.

741A Detail Information (Data Code 5)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Shipper RIS				Receiver RIS				Transaction Num						Co	PC		AC	DC	[Line#]		Gross Weight					Net Weight													

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
		Element Weight											Ele Limit of Error					Weight %						Isotope Weight												Iso Limit of Error			

[18] Gross Weight and Net Weight may be reported, but are not captured by NMMSS at this time.

[19] Miscellaneous field, available for use by fuel fabricators to communicate to reactor facilities the obligations per fuel element. This information may be reported but is not captured by NMMSS.

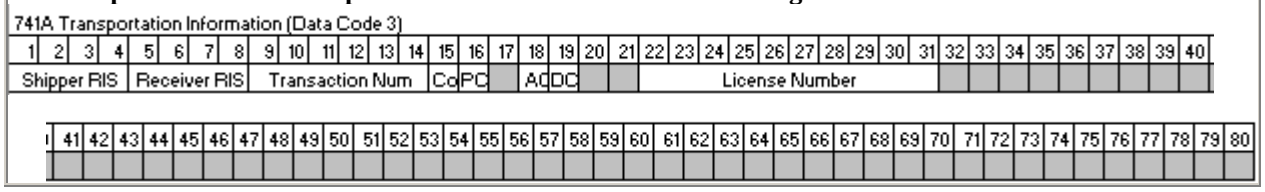
[20] Weight Percent Isotope/Parts Per Million is reported as a percentage except when the material type is 70 (total uranium enriched in U-233), which is reported using 6 numeric digits and converted to decimal form by NMMSS.

Import/Export Detail Information (Data Code 3)

Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justified Repeat for each line
Receiver RIS	2	5	8	Char(4)	✓	Left justified Repeat for each line
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified Repeat for each line
Correction Number (Change Digit)	4	15	15	Char(1)		Repeat for each line
Process Code	5	16	16	Char(1)	✓	Repeat for each line
Action Code	6	18	18	Char(1)	✓	Repeat for each line
Data Code	-	19	19	Num(1)	✓	Value is 3
License Number (Import/Export)	15	22	31	Char(10)		Left justified

Note; if no applicable license number is reported, there is no need to submit a data line for data code 3.

Visual representation of field placement in 80 Column File formatting of transaction detail information.

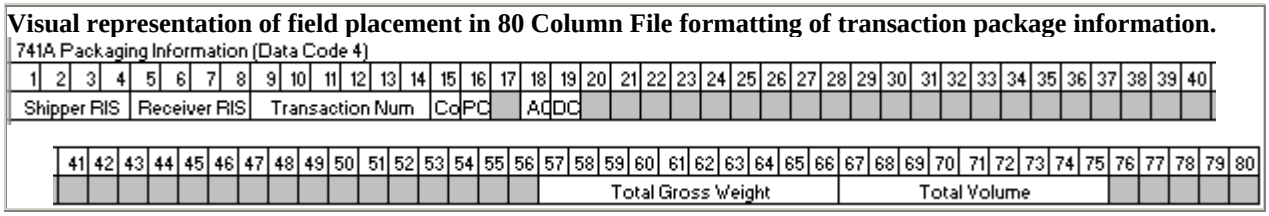


Packaging Detail Information (Data Code 4)

Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justified Repeat for each line
Receiver RIS	2	5	8	Char(4)	✓	Left justified Repeat for each line
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified Repeat for each line
Correction Number (Change Digit)	4	15	15	Char(1)		Repeat for each line
Process Code	5	16	16	Char(1)	✓	Repeat for each line
Action Code	6	18	18	Char(1)	✓	Repeat for each line
Data Code	-	19	19	Num(1)	✓	Value is 4
Total Gross Weight	24	57	66	Num(10)		Right justified Whole number
Total Volume[21]	25	67	75	Num(9)		Right justified Whole number

Note; if total gross weight and/or total volume is not reported, there is no need to submit a data line for data code 4.

Visual representation of field placement in 80 Column File formatting of transaction package information.



[21]Report total volume in cubic feet for material transferred to or from a nuclear waste management facility (RIS beginning with "V").

Obligation Information (Data Code 7)

Field Description	***741***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	1	1	4	Char(4)	✓	Left justified Repeat for each line
Receiver RIS	2	5	8	Char(4)	✓	Left justified Repeat for each line
Transaction/Transfer Number	3	9	14	Char(6)	✓	Right justified Repeat for each line
Correction Number (Change Digit)	4	15	15	Char(1)		Repeat for each line
Process Code	5	16	16	Char(1)	✓	Repeat for each line
Action Code	6	18	18	Char(1)	✓	Repeat for each line
Data Code	-	19	19	Num(1)	✓	Value is 7
Line Number	17	20	21	Num(2)		Right justified
Material Type	19	22	23	Char(2)		Left justified
Obligated Element Weight	20	24	34	Num(11,2)		Right justified
		Do not enter a decimal point; element decimal values are read from columns 33 and 34.				
Obligated Isotope Weight[22]	21	35	45	Num(11,2)		Right justified
		Do not enter a decimal point; isotope decimal values are read from columns 44 and 45				
Country*	18	46	47	Char(2)		Right justified

Note: if obligated data is not reported, there is no need to submit a data line for data code 7.

Visual representation of field placement in 80 Column File formatting of Transaction Obligation information.

741A Obligation Information (Data Code 7)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Shipper RIS				Receiver RIS				Transaction Num						Co	PC		AC	DC	[Line#]		MT		Element Weight												Isotope W					

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
weight					Ctry																																			

* The assigned codes for each country are listed below.

31	Australia	83	Euratom/Japan
32	Canada	84	Australia/Euratom/Japan
33**	Euratom	85	Canada/Euratom/Japan
34	Japan	86	People's Republic of China/Japan
35	People's Republic of China	91	Australia/Euratom
37	Switzerland	92	Canada/Euratom
81	Australia/Japan	WR	Former Soviet Union Weapons Material
82	Canada/Japan		

**EURATOM comprises the following member states: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Hungary, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom.

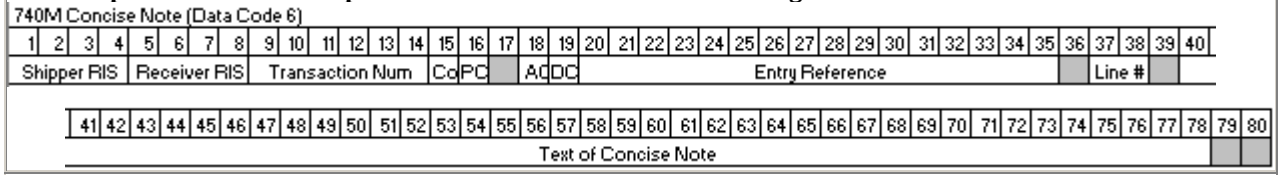
[22]Obligated Isotope Weight is required for Enriched Uranium only.

Concise Note Information DOE/NRC Form 740M (Data Code 6)

Field Description	***740M***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Shipper RIS	5a	1	4	Char(4)	✓	Left justified Repeat for each line
Receiver RIS	5b	5	8	Char(4)	✓	Left justified Repeat for each line
Transaction/Transfer Number	5c	9	14	Char(6)	✓	Right justified Repeat for each line
Correction Number (Change Digit)	5d	15	15	Char(1)		Repeat for each line
Process Code	5e	16	16	Char(1)	✓	Repeat for each line
Action Code	5f	18	18	Char(1)	✓	Repeat for each line
Data Code	-	19	19	Char(1)	✓	Value is 6
Entry Reference	7b	20	35	Char(16)	✓	Left justified
Line Number	7a	37	38	Char(2)	✓	Left justified
Concise Note Text	7c	40	78	Char(39)	✓	Left justified

Note; if concise note information is not reported, there is no need to submit a data line for data code 6.

Visual representation of field placement in 80 Column File formatting of transaction concise note information.



3. INVENTORY DATA

3.1. Requirements for DOE/NRC Form 742C

3.1.1. XML File Formatting

An example of an inventory submission in XML format is shown below. Additional examples are shown in Appendix C along with the corresponding DOE/NRC form.

```
<PHYSICALINVENTORY>
 <INVENTORY RIS="ABC" DATE="02282001" CONCISENOTEIND="">
  <LINEITEM LINENUMBER="1" NUMBEROFITEMS="500" BATCH="BATCH001">
   <ELEMENT ELEMENTWEIGHT="1000">
    <MATERIAL SUMMARYMATERIALTYPE="31" PROJECT="AAE2021003" COEILINENUMBER="385"
OWNER="G" KEYMEASUREPOINT="E" MEASUREBASIS="F" OTHERMEASUREPOINT="B"
MEASUREMETHOD="T" SCRAPPROGRAM="" ENTRYSTATUS="">
     <ISOTOPE WEIGHTPERCENT="16" ISOTOPEWEIGHT="1600">
     </ISOTOPE>
    </MATERIAL>
   </ELEMENT>
  </LINEITEM>
 </INVENTORY>
</PHYSICALINVENTORY>
```

Root Tag <PHYSICALINVENTORY>

Header Information <INVENTORY>

Field Description	*742C*	*XML Attribute*	*Type*	*Essential*	*Note*
RIS	3	RIS	Char(4)	✓	
Inventory Report Date[23]	4	DATE	Date	✓	MMDDYYYY
Concise Note Indicator	2	CONCISENOTEIND	Char(1)		X indicates notes

Detail Information <LINEITEM>

Field Description	*742C*	*XML Attribute*	*Type*	*Essential*
Sequence Number[24]	8i[25]	LINENUMBER	Num(5)	✓
Number of Items	8k	NUMBEROFITEMS	Num(2)	✓
Batch Name/Identification	8j	BATCH	Char(16)	

Detail Information <ELEMENT>

Field Description	*742C*	*XML Attribute*	*Type*	*Essential*
Element Weight	8c[24]	ELEMENTWEIGHT	Num(11,2)	✓

Do not enter a decimal point; the left-most two digits are considered decimal values.

Detail Information <MATERIAL>

Field Description	*742C*	*XML Attribute*	*Type*	*Essential*

[23] The Inventory Report Date must be last day of the month (e.g., 09302001). Effective October 1, 2003 this may be reported for any day of the month.
[24] Sequence number should begin at one for each material type and the pairs of lines (Data Type Code 1 and Type Code 2) should be consecutively numbered including the total line (composition code 899). The sequence number for a Data Type Code 1 line should be coded for the corresponding Data Type Code 2 line.
[25] For reporting total lines use blocks 9c (Element), 9d (Isotope), and 9i (Sequence Number) of the 742C.

Material Type	8a	SUMMARYMATERIALTYPE	Char(2)	✓	
Project Number[26]	8e	PROJECT	Char(10)		
Composition-Facility Code[27]	8b	COEILINENUMBER	Char(4)	✓	
Owner Code	8h	OWNER	Char(1)	✓	
Key Measurement Point	8l	KEYMEASUREPOINT	Char(2)		
Measurement Basis	8m	MEASUREBASIS	Char(1)		
Other Measurement Point	8m	OTHERMEASUREPOINT	Char(2)		
Measurement Method	8m	MEASUREMETHOD	Char(1)		
Scrap Program[28]	8f	SCRAPPROGRAM	Char(1)		List tag only
Entry Status	8n	ENTRYSTATUS	Char(1)		

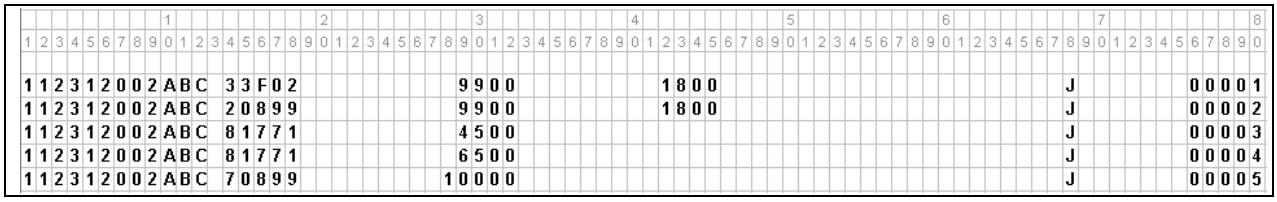
Detail Information <ISOTOPE>

Field Description	***742C***	***XML Attribute***	***Type***	***Essential***
Weight Percent Isotope/Parts Per Million	8g	WEIGHTPERCENT	Num(6,4)[29]	
Do not enter a decimal point; the left-most four digits are considered decimal values.				
Isotope Weight	8d[30]	ISOTOPEWEIGHT	Num(11,2)	
Do not enter a decimal point; the left-most two digits are considered decimal values.				

[26] Leave blank. (Required when reporting government material.)
[27] For total lines, this field will always contain "899".
[28] Scrap Program code does not apply to NRC data submissions but the tag must be listed in the XML file for successful data import.
[29] Weight Percent Isotope/Parts Per Million is reported as a percentage except when the material type is 70 (total uranium enriched in U-233), which is reported using 6 numeric digits and converted to decimal form by NMMSS.
[30] For reporting total lines use blocks 9c (Element), 9d (Isotope), and 9i (Sequence Number) of the 742C.

3.1.2. 80 Column File Formatting

An example of an inventory submission in an 80 column file format document is shown below. Additional examples are shown in Appendix C along with the corresponding DOE/NRC form. Note that gridlines and the numbering structure at the top are not a part of the data submission. They are provided for demonstration purposes only.



Physical Inventory Listing Header Information (Data Code 1)

Field Description	***742C***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Data Code	-	1	1	Num(1)	✓	Value is 1
Inventory Report Date[31]	4	2	9	Date	✓	MMDDYYYY
RIS	3	10	13	Char(4)	✓	Left justified
Material Type Code	8A	14	15	Char(2)	✓	Left justified
Composition-Facility Code[32]	8B	16	19	Char(4)	✓	Left justified
Element Weight	8C	20	32	Num(13,2)		Right justified
Do not enter a decimal point; element decimal values are read from columns 31 and 32.						
Isotope Weight	8D	33	45	Num(13,2)		Right justified
Do not enter a decimal point; isotope decimal values are read from columns 44 and 45.						
Project Number[33]	8E	46	55	Char(10)		Left justified
Scrap Program[34]	8F	56	56	Char(1)		Leave blank
Weight Percent Isotope/Parts Per Million	8G	61	66	Num(6,4)[35]		Right justified
Do not enter a decimal point; weight percent decimal values are read from columns 63 to 66.						
Owner Code	8H	68	68	Char(1)		
Sequence Number Code[36]	8I	76	80	Num(5)		Right justified

Note: If <u>both</u> the element weight and isotope weight are zero, there is no need to submit a data line for data code 1.

[31] The Inventory Report Date must be last day of the month (e.g., 09302001). Effective October 1, 2003 this may be reported for any day of the month.
[32] For total lines, this field will always contain "899".
[33] Leave blank. (Required when reporting government owned material.)
[34] Scrap Program code does not apply to NRC data submissions; leave these columns blank.
[35] Weight Percent Isotope/Parts Per Million is reported as a percentage except when the material type is 70 (total uranium enriched in U-233), which is reported using 6 numeric digits and converted to decimal form by NMMSS.
[36] Sequence number should begin at one for each material type and the pairs of lines (Data Type Code 1 and Data Type Code 2) should be consecutively numbered including the total line (composition code 899). The sequence number for a Data Type Code 1 line should be coded for the corresponding Data Type Code 2 line.

Visual representations of field placement in 80 Column file formatting physical inventory listing header information.

733 Header Information (Data Code 1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
DC	Inv Report Date								RIS				MT		Comp Code				Element Weight																					Isotope Weig

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
ght					Project Number										S					Weight %							O											Sequence #			

Physical Inventory Listing Detail Information (Data Code 2)

Selected IAEA facilities only.

Field Description	***742C***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Data Code	-	1	1	Num(1)	✓	Value is 2
Inventory Report Date[37]	4	2	9	Date	✓	MMDDYYYY
RIS	3	10	13	Char(4)	✓	Left justified
Material Type	8A	14	15	Char(2)	✓	Left justified
Composition-Facility Code[38]	8B	16	19	Char(4)	✓	Left justified
Batch Identification	8J	20	35	Char(16)		Left justified
Number of Items	8K	36	39	Num(4)		Right justified
Key Measurement Point	8L	40	41	Char(2)		Left justified
Measurement Basis	8M1	42	42	Char(1)		
Other Measurement Point	8M2	43	44	Char(2)		Left justified
Measurement Method	8M3	45	45	Char(1)		
Entry Status	8N	46	46	Char(1)		
Concise Note Indicator	2	47	47	Char(1)		X indicates notes
Sequence Number[39]	8I	76	80	Num(5)		Right justified

Visual representation of field placement in 80 Column file formatting of inventory detail information.

733A Detail Information (Data Code 2) [sites selected for IAEA]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
DC	Inv Report Date								RIS				MT		Comp Code				Batch Identification																				# Items			KMI

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
MP	Mb	OMP		Mm	E	C																															Sequence #			

[37] The Inventory Report Date must be last day of the month (e.g., 09302001). Effective October 1, 2003 this may be reported for any day of the month.

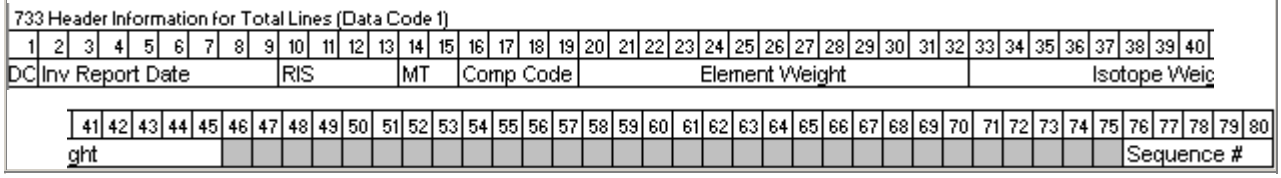
[38] For total lines, this field will always contain "899".

[39] Sequence number should begin at one for each material type and the pairs of lines (Data Type Code 1 and Data Type Code 2) should be consecutively numbered including the total line (composition code 899). The sequence number for a Data Type Code 1 line should be coded for the corresponding Data Type Code 2 line.

Physical Inventory Listing Header Information for Reporting Total Lines- COEI 899 (Data Code 1)

Field Description	***742C***	***80 Column File Format Position***				
		Begin	***End***	***Type***	***Essential***	***Note***
Data Code	-	1	1	Num(1)	✓	Value is 1
Inventory Report Date[40]	4	2	9	Date	✓	MMDDYYYY
RIS	3	10	13	Char(4)	✓	Left justified
Material Type[41]	8A	14	15	Char(2)	✓	Left justified
Composition-Facility Code[42]	8B	16	19	Char(4)	✓	Left justified Value is 899
Element Weight	9C	20	32	Num(13,2)	✓	Right justified
	Do not enter a decimal point; element decimal values are read from columns 31 and 32.					
Isotope Weight	9D	33	45	Num(13,2)		Right justified
	Do not enter a decimal point; isotope decimal values are read from columns 44 and 45.					
Sequence Number[43]	9I	76	80	Num(5)		Right justified

Visual representation of field placement in 80 Column file formatting of total lines physical inventory listing header information.



[40] The Inventory Report Date must be last day of the month (e.g., 09302001). Effective October 1, 2003 this may be reported for any day of the month.

[41] Material Type for reported total lines should be coded as described in NUREG/BR-0007, except for enriched Uranium which should be coded as material type 20.

[42] For total lines, this field will always contain "899".

[43] This number should be one greater than the last sequence number entered for a material type.

4. MATERIAL BALANCE DATA

4.1. Requirements for DOE/NRC Form 742

4.1.1. XML File Formatting

An example of material balance submission in XML format is shown below. Additional examples are shown in Appendix C along with the corresponding DOE/NRC form.

```
<MATERIALBALANCEREPORT>
 <MATERIALBALANCE RIS="ABC " STARTDATE="02012002" ENDDATE="02282002" CONCISENOTEIND="">
   <LINEITEM DATACODE="3" SUMMARYMATERIALTYPE="10" MBC="09">
     <ELEMENT ELEMENTWEIGHT="100" TYPEINVENTORYCHANGE="" OTHERRIS="" ENTRYSTATUS="N">
         <ISOTOPE ISOTOPEWEIGHT="10">
         </ISOTOPE>
     </ELEMENT>
   </LINEITEM>
 </MATERIALBALANCE>
</MATERIALBALANCEREPORT>
```

Root Tag <MATERIALBALANCEREPORT>

Header Information <MATERIALBALANCE>

Field Description	*742*	*XML Attribute*	*Type*	*Essential*	*Note*
RIS	3	RIS	Char(4)	✓	
Report Period From	4	STARTDATE	Date	✓	MMDDYYYY
Report Period To	4	ENDDATE	Date	✓	MMDDYYYY
Concise Note Indicator	7	CONCISENOTEIND	Char(1)		X indicates notes

Detail Information <LINEITEM>

Field Description	*742*	*XML Attribute*	*Type*	*Essential*	*Note*
Data Code		DATACODE	Num(1)	✓	Value is 3 (Receipts) or 4 (Removals)
Material Type	5	SUMMARYMATERIALTYPE	Char(2)	✓	
Material Balance Category*	Row #	MBC	Char(2)		

Detail Information <ELEMENT>

Field Description	*742*	*XML Attribute*	*Type*	*Essential*	*Note*
Element Weight	column A	ELEMENTWEIGHT	Num(13,2)		
Inventory Change Type (ICT)	line 22 & 71	TYPEINVENTORYCHANGE	Char(2)		
Other RIS	line 11,30, 42,43 & 51	OTHERRIS	Char(4)		
Entry Status		ENTRYSTATUS	Char(1)		

Detail Information <ISOTOPE>

Field Description	*742*	*XML Attribute*	*Type*	*Essential*	*Note*
Isotope Weight	column B	ISOTOPEWEIGHT	Num(13,2)		

* Obligated Material Balance Categories, 85 – A1 are listed below:

85	Australia (31)
86	Canada (32)
87	Euratom (33)
88	Japan (34)
89	People's Republic of China (35)
91	Australia/Euratom (91)
92	Canada/Euratom (92)
93	Former Soviet Union Weapons (WR)
94	Australia/Japan (81)
95	Canada/Japan (82)
96	Euratom/Japan (83)
97	Australia/Euratom/Japan (84)
98	Canada/Euratom/Japan (85)
99	People's Republic of China/Japan (86)
A1[44]	Switzerland (37)

[44] Material Balance Categories greater than 99 are assigned alpha numeric characters, i.e., A1, A2, A3, etc.

4.1.2. 80 Column File Formatting

Examples of material balance submissions in an 80 column file format document are shown below. For corresponding 742 forms showing these examples refer to Appendix C. Note that gridlines and the numbering structure at the top are not a part of the data submission.

```
         1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890

3ABC 200101200212312002      1120700       11120011DEF   N
3ABC 200101200212312002         3800         250030GHI   N
4ABC 200101200212312002          200          10046      N
4ABC 200101200212312002      1124300       11360081      N
```

Material Balance Report Detail Information (Data Code 3 & 4)

Field Description	***742***	***80 Column File Format Position*** ***Begin***	***End***	***Type***	***Essential***	***Note***
Data Code	-	1	1	Num(1)	✓	Value is 3 (Receipts) or 4 (Removals)
RIS	3	2	5	Char(4)	✓	Left justified
Material Type	5	6	7	Char(2)	✓	Left justified
Report Period From	4	8	15	Date	✓	MMDDYYYY
Report Period To	4	16	23	Date	✓	MMDDYYYY
Element Weight	column A	24	36	Num(13,2)		Right justified
Do not enter a decimal point; element decimal values are read from columns 35 and 36.						
Isotope Weight	column B	37	49	Num(13,2)		Right justified
Do not enter a decimal point; isotope decimal values are read from columns 48 and 49.						
Material Balance Category*	Row #	50	51	Char(2)		
Other RIS	line 11,30, 42,43, & 51	52	55	Char(4)		Left justified
Inventory Change Type (ICT)	line 22 & 71	56	57	Char(2)		Left justified
Entry Status		58	58	Char(1)		
Concise Note Indicator	7	59	59	Char(1)		X indicates notes

Note: If both the element weight and isotope weight are zero, there is no need to submit a data line for data code 1.

* Obligated Material Balance Categories, 85 – A1, are shown using data code 4.

85	Australia (31)	94	Australia/Japan (81)
86	Canada (32)	95	Canada/Japan (82)
87	Euratom (33)	96	Euratom/Japan (83)
88	Japan (34)	97	Australia/Euratom/Japan (84)
89	People's Republic of China (35)	98	Canada/Euratom/Japan (85)
91	Australia/Euratom (91)	99	People's Republic of China/Japan (86)
92	Canada/Euratom (92)	A1	Switzerland (37)[45]

Visual representation of field placement in 80 Column File formatting of material balance detail information.

Material Balance Report Detail Information (Data Code 3 & 4)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
DC	RIS				MT		Report Period From								Report Period To								Element Weight																

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Isotope Weight									MBC		Other RIS				ICT		E	C																					

[45] Material Balance Categories greater than 99 are assigned alpha numeric characters, i.e., A1, A2, A3, etc.

APPENDIX A
PROCESS CODE

PROCESS CODE

DEFINITION: The process code identifies the type of system action to be taken for the data being reported as follows:

1. Process code A identifies initial actions by shippers and receivers to report shipment, receipt, correction, and other defined activities associated with transfers of material and other types of inventory changes;

2. Process code C is used to signify the replacement of previously reported data. Its use is restricted to the replacement of data in the same reporting month;

3. Process code D applies when the facility intends the deletion of previously reported data. Its use is also restricted to applying only to data in the same reporting month; and

4. Process code Z is used in conjunction with action code D by the receiver to accept a shipper's change without the receiver having to retype the detailed lines.

SPECIAL NOTE: If replacement or deletion of data is desired, it is suggested that the reporting facility ensures that the accounting month to be affected is still "open" (being processed by the NMMSS) by calling the appropriate NMMSS contact since these actions are restricted and based on specified accounting periods.

APPENDIX B
NEGATIVE NUMBER CONVERSION

NUMBER CONVERSION CHART

Negative numbers are permitted in both file formats accepted by NMMSS and may be indicated by the use of a minus sign (-). At times, the numeric value may be too large to allow the indication of a negative value using the minus sign. In this case, a character conversion may be used to indicate that the value is a negative value. See the chart below to convert negative number values to character values.

Numeric Value	Negative Value
0	}
1	J
2	K
3	L
4	M
5	N
6	O
7	P
8	Q
9	R

Example: If -22.00 grams of a specific material is to be reported it would be entered as 220} right justified in the appropriate cell range. (The negative value is always recorded with the last number.)

APPENDIX C
EXAMPLES

Example 1

DOE/NRC FORM 741
MANDATORY DATA COLLECTION

U.S. DEPARTMENT OF ENERGY
AND
U.S. NUCLEAR REGULATORY COMMISSION

NUCLEAR MATERIAL TRANSACTION REPORT

1. SHIPPER'S RIS	2. RECEIVER'S RIS	3. TRANSACTION NO.	4. CORRECTION NO.	5. PROCESSING CODE a. SHIPPER	5. PROCESSING CODE b. RECEIVER	6. ACTION CODE a. SHIPPER	6. ACTION CODE b. RECEIVER
ABC	DEF	131		A		A	

8a. NAME AND ADDRESS OF SHIPPER:
Advanced Physics
123 Anywhere Road
Commontown ZA 11111

10. NO. OF DATA LINES: 3

22. ACTION DATE

	MONTH	DAY	YEAR
a. SHIPMENT	12	31	2002
b. SHIPPER'S CORRECTION			
c. RECEIPT			
d. RECEIVER'S MEASUREMENT			
e. RECEIVER'S CORRECTION			

24. TOTAL GROSS WEIGHT: 20081

BATCH REFERENCE (a)	LINE NO. (b)	TYPE OF INV. CHANGE (c)	IDENTIFICATION (d)	NO. OF ITEMS (e)	PROJECT NUMBER (f)	MATERIAL TYPE (g)	COMPOSITION/FACILITY CODE (h)	OWNER CODE (i)	KEY MEAS. POINT (j)	MEAS. IDENT. (k)	GROSS WEIGHT (l)	NET WEIGHT (m)	ELEMENT WEIGHT (n)	ELEMENT LIMIT OF ERROR (o)	WEIGHT % ISOTOPE (p)	ISOTOPE WEIGHT (q)	ISOTOPE LIMIT OF ERROR (r)
	01		A Batch ID	1		10	309	J					426.00		.6610	3.00	
	02		A Batch ID	1		20	309	J					2213.00		2.5305	56.00	
	03		A Batch ID	1		50	309	J					901.00		99.3340	895.00	

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

80 Column import:

Example 1 Transaction Shipment

```
ABC DEF  131 A A103                                                  12312002
ABC DEF  131 A A201  A BATCH ID          1          10309   J
ABC DEF  131 A A501                          42600          6610      300
ABC DEF  131 A A202  A BATCH ID          1          20309   J
ABC DEF  131 A A502                      221300          25305     5600
ABC DEF  131 A A203  A BATCH ID          1          50309   J
ABC DEF  131 A A503                          90100      993340    89500
ABC DEF  131 A A4                                         20081
```

XML format:

```
<TRANSACTION>
  <SHIPMENT SHIPPERRIS="ABC" RECEIVERRIS="DEF" TRANSFERNUMBER="131"
CORRECTION="" PROCESSCODE="A" ACTIONCODE="A" NUMBEROFLINES="3"
NATUREOFTRANSACTION="" SHIPPEDFORRIS="" SHIPPEDTORIS="" TRANSFERAUTHORITY=""
UKFLAG="" ACTIONDATE="12312002" LICENSENUMBER="" TOTALGROSSWEIGHT="20081"
TOTALVOLUME="" CONCISENOTEIND="" SEALEDSOURCE="" TOTRANSFERAUTHORITY="">
    <CONCISENOTE LINENUMBER="" ENTRYREFERENCE="" TEXTOFCONCISENOTE="">
    </CONCISENOTE>
    <OBLIGATION LINENUMBER="" COUNTRYCODE="" SUMMARYMATERIALTYPE="" ELEMENT
WEIGHT="" ISOTOPE WEIGHT="">
    </OBLIGATION>
    <LINEITEM BACKREFLINENUMBER="" LINENUMBER="1" BATCH="A Batch ID"
NUMBEROFITEMS="1">
      <ELEMENT ELEMENTWEIGHT="42600" ELEMENTLOE="">
        <MATERIAL SUMMARYMATERIALTYPE="10" PROJECT="" COEILINENUMBER="309"
TYPEINVENTORYCHANGE="" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="" NETWEIGHT=""
TOPROJECT="" TOCOEILINENUMBER="">
          <ISOTOPE WEIGHTPERCENT="6610" ISOTOPEWEIGHT="300" ISOTOPELOE="">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
    <LINEITEM BACKREFLINENUMBER="" LINENUMBER="2" BATCH="A Batch ID"
NUMBEROFITEMS="1">
      <ELEMENT ELEMENTWEIGHT="221300" ELEMENTLOE="">
        <MATERIAL SUMMARYMATERIALTYPE="20" PROJECT="" COEILINENUMBER="309"
TYPEINVENTORYCHANGE="" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="" NETWEIGHT=""
TOPROJECT="" TOCOEILINENUMBER="">
          <ISOTOPE WEIGHTPERCENT="25305" ISOTOPEWEIGHT="5600" ISOTOPELOE="">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
    <LINEITEM BACKREFLINENUMBER="" LINENUMBER="3" BATCH="A Batch ID"
NUMBEROFITEMS="1">
      <ELEMENT ELEMENTWEIGHT="90100" ELEMENTLOE="">
        <MATERIAL SUMMARYMATERIALTYPE="50" PROJECT="" COEILINENUMBER="309"
TYPEINVENTORYCHANGE="" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="" NETWEIGHT=""
TOPROJECT="" TOCOEILINENUMBER="">
          <ISOTOPE WEIGHTPERCENT="993340" ISOTOPEWEIGHT="89500" ISOTOPELOE="">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
  </SHIPMENT>
</TRANSACTION>
```

Example 2

DOE/NRC FORM 741
(5-2002) Previous editions are obsolete
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 301, 40, 50, 70, 72, 74, 75, 150 Public Laws 83-703, 93-438, 95-91

U.S. DEPARTMENT OF ENERGY
AND
U.S. NUCLEAR REGULATORY COMMISSION

NUCLEAR MATERIAL TRANSACTION REPORT

APPROVED BY OMB: NO. 3150-0003
EXPIRES: 05/31/2005
Estimated burden per response to comply with this mandatory collection request: 45 minutes. The information is required for NRC accounting reports that show changes in inventory of nuclear materials. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington DC 20555-0001, or by Internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0003), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. SHIPPER RS	2. RECEIVER RS	3. TRANSACTION NO.	4. CORRECTION NO	5. PROCESSING CODE			6. DOCUMENTATION (Only if attachment is desired)				
ABC	DEF	131	1	A	C	4					
a. NAME AND ADDRESS OF SHIPPER	b. LICENSE NO.	a. NAME AND ADDRESS OF RECEIVER	b. LICENSE NO.	c. ATTENTION	d. TELEPHONE	e. TRANSFER AUTHORITY: CONTRACT, NRC DEPT, OR ORDER NUMBER					
Advanced Physics *123 Anywhere Road* *Commontown ZA 11111*											

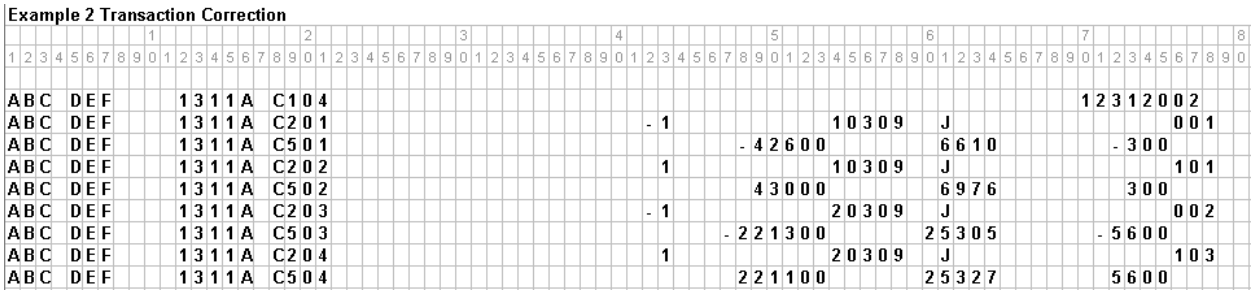
Item	Back Reference	Line No	Type of Inv. Change	Identification (Item and/or Batch Number)	No. of Items	Product Number	Mate rial Type	Comm Facility Code	Owner Mat'l Code	Key Mat'l Point	Mat'l Balance Segments 1	2	3	Gross Weight	Net Weight	Element Weight	Element Limit of Error	Weight % Isotope	Isotope Weight	Isotope Limit of Error
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r		
28. SHIPPER DATA	001	01			-1		10	309	J					-426.00		.6610	-3.00			
	101	02			1		10	309	J					430.00		.6976	3.00			
	002	03			-1		20	309	J					-2213.00		2.5305	-56.00			
	103	04			1		20	309	J					2211.00		2.5327	56.00			
27. RECEIVER DATA																				

28a SHIPPER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED
27a RECEIVER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

80 Column format:

Example 2 Transaction Correction



```
ABC DEF  1311A C104                                                  12312002
ABC DEF  1311A C201                                -1          10309  J                 001
ABC DEF  1311A C501                                     -42600       6610      -300
ABC DEF  1311A C202                                1          10309  J                 101
ABC DEF  1311A C502                                     43000        6976       300
ABC DEF  1311A C203                                -1          20309  J                 002
ABC DEF  1311A C503                                     -221300      25305     -5600
ABC DEF  1311A C204                                1          20309  J                 103
ABC DEF  1311A C504                                     221100       25327      5600
```

XML format:

```
<TRANSACTION>
  <SHIPMENT SHIPPERRIS=" ABC" RECEIVERRIS="DEF" TRANSFERNUMBER="131"
CORRECTION="1" PROCESSCODE="A" ACTIONCODE="C" NUMBEROFLINES="4"
NATUREOFTRANSACTION="" SHIPPEDFORRIS="" SHIPPEDTORIS="" TRANSFERAUTHORITY=""
UKFLAG="" ACTIONDATE="12312002" LICENSENUMBER="" TOTALGROSSWEIGHT=""
TOTALVOLUME="" CONCISENOTEIND="" SEALEDSOURCE="" TOTRANSFERAUTHORITY="">
    <CONCISENOTE LINENUMBER="" ENTRYREFERENCE="" TEXTOFCONCISENOTE="">
    </CONCISENOTE>
    <OBLIGATION LINENUMBER="" COUNTRYCODE="" SUMMARYMATERIALTYPE="" ELEMENT
WEIGHT="" ISOTOPE WEIGHT="">
    </OBLIGATION>
    <LINEITEM BACKREFLINENUMBER="001" LINENUMBER="1" BATCH="" NUMBEROFITEMS="-1">
      <ELEMENT ELEMENTWEIGHT="-42600" ELEMENTLOE="">
        <MATERIAL SUMMARYMATERIALTYPE="10" PROJECT="" COEILINENUMBER="309"
TYPEINVENTORYCHANGE="" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="" NETWEIGHT=""
TOPROJECT="" TOCOEILINENUMBER="">
          <ISOTOPE WEIGHTPERCENT="6610" ISOTOPEWEIGHT="-300" ISOTOPELOE="">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
    <LINEITEM BACKREFLINENUMBER="101" LINENUMBER="2" BATCH="" NUMBEROFITEMS="1">
      <ELEMENT ELEMENTWEIGHT="43000" ELEMENTLOE="">
        <MATERIAL SUMMARYMATERIALTYPE="10" PROJECT="" COEILINENUMBER="309"
TYPEINVENTORYCHANGE="" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="" NETWEIGHT=""
TOPROJECT="" TOCOEILINENUMBER="">
          <ISOTOPE WEIGHTPERCENT="6976" ISOTOPEWEIGHT="300" ISOTOPELOE="">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
    <LINEITEM BACKREFLINENUMBER="002" LINENUMBER="3" BATCH="" NUMBEROFITEMS="-1">
      <ELEMENT ELEMENTWEIGHT="-221300" ELEMENTLOE="">
        <MATERIAL SUMMARYMATERIALTYPE="20" PROJECT="" COEILINENUMBER="309"
TYPEINVENTORYCHANGE="" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="" NETWEIGHT=""
TOPROJECT="" TOCOEILINENUMBER="">
          <ISOTOPE WEIGHTPERCENT="25305" ISOTOPEWEIGHT="-5600" ISOTOPELOE="">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
    <LINEITEM BACKREFLINENUMBER="103" LINENUMBER="4" BATCH="" NUMBEROFITEMS="1">
```

```
      <ELEMENT ELEMENTWEIGHT="221100" ELEMENTLOE="">
        <MATERIAL SUMMARYMATERIALTYPE="20" PROJECT="" COEILINENUMBER="309"
TYPEINVENTORYCHANGE="" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="" NETWEIGHT=""
TOPROJECT="" TOCOEILINENUMBER="">
          <ISOTOPE WEIGHTPERCENT="25327" ISOTOPEWEIGHT="5600" ISOTOPELOE="">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
  </SHIPMENT>
</TRANSACTION>
```

Example 3a

DOE/NRC FORM 741
(5-2002) Previous editions are obsolete
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150 Public Laws 83-703, 93-438, 95-91

U.S. DEPARTMENT OF ENERGY
AND
U.S. NUCLEAR REGULATORY COMMISSION

NUCLEAR MATERIAL TRANSACTION REPORT

1. SHIPPER'S RIS	2. RECEIVER'S RIS	3. TRANSACTION NO.	4. CORRECTION NO.	5. PROCESSING CODE a. SHIPPER	5. b. RECEIVER	6. ACTION CODE a. SHIPPER	6. b. RECEIVER
ABC	DEF	131			A		B

8a. NAME AND ADDRESS OF SHIPPER:
Advanced Physics
123 Anywhere Road
Commontown ZA 11111

10. NO. OF DATA LINES: 0

22. ACTION DATE	MONTH (MM)	DAY (DD)	YEAR (YYYY)
a. SHIPMENT			
b. SHIPPER'S CORRECTION			
c. RECEIPT	12	31	2002
d. RECEIVER'S MUF/SRD/IDF			
e. RECEIVER'S CORRECTION			

BACK REFERENCE	LINE NO	TYPE OF INV. CHANGE	IDENTIFICATION (ITEM/BATCH NAME)	NO. OF ITEMS	PROJECT NUMBER	MATERIAL TYPE	COMPOSITION/FACILITY CODE	OWNER CODE	KEY MEASUREMENT POINT	MEASUREMENT IDENT. BASIS	CMP	METHOD	GROSS WEIGHT	NET WEIGHT	ELEMENT WEIGHT	ELEMENT LIMIT OF ERROR	WEIGHT % ISOTOPE	ISOTOPE WEIGHT	ISOTOPE LIMIT OF ERROR
a	b	c	d	e	f	g	h	i	j				l	m	n	o	p	q	r

28. SHIPPER'S DATA / 28c. SHIPPER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED
27. RECEIVER'S DATA / 27c. RECEIVER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

This data is combined with Examples 3b, 3c, and 3d for one electronic file submission shown on page 35.

Example 3b

DOE/NRC FORM 741
(5-2002) Previous editions are obsolete
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150 Public Laws 83-703, 93-438, 95-91

U.S. DEPARTMENT OF ENERGY
AND
U.S. NUCLEAR REGULATORY COMMISSION

NUCLEAR MATERIAL TRANSACTION REPORT

1. SHIPPER'S RIS	2. RECEIVER'S RIS	3. TRANSACTION NO.	4. CORRECTION NO.	5. PROCESSING CODE a. SHIPPER	5. b. RECEIVER	6. ACTION CODE a. SHIPPER	6. b. RECEIVER
ABC	RGHI	10257		A		A	

8a. NAME AND ADDRESS OF SHIPPER: Advanced Physics, 123 Anywhere Road, Commontown ZA 11111

10. NO. OF DATA LINES: 2

15. EXPORT OR IMPORT TRANSFERS: LICENSE NO.: GEN-LIC

17. LINE NUMBER	18. COUNTRY OF OBLIGATION	19. MATERIAL TYPE	20. OBLIGATED ELEMENT WEIGHT	21. OBLIGATED ISOTOPE WEIGHT
01	32	10	426	
02	32	20	2213	56

22. ACTION DATE

	MONTH	DAY	YEAR
a. SHIPMENT	12	31	2002
b. SHIPPER'S CORRECTION			
c. RECEIPT			
d. RECEIVER'S MIS/S/D/F			
e. RECEIVER'S CORRECTION			

23. MISCELLANEOUS — b. CONCISE NOTE ATTACHED: X; c. IS REPORTABLE? YES ☐ NO ☐

24. TOTAL GROSS WEIGHT: 58499

25. TOTAL VOLUME (WASTE TRANSFERS ONLY)

26. SHIPPER'S DATA

BACK REFERENCE a	LINE NO. b	TYPE OF INV. CHANGE c	IDENTIFICATION d	NO. OF ITEMS e	PROJECT NUMBER f	MATERIAL TYPE g	COMPOSITION FACILITY CODE h	OWNER CODE i	KEY MEAS. POINT j	MEAS. IDENT. k	GROSS WEIGHT l	NET WEIGHT m	ELEMENT WEIGHT n	ELEMENT LIMIT OF ERROR o	WEIGHT % ISOTOPE p	ISOTOPE WEIGHT q	ISOTOPE LIMIT OF ERROR r
	01		A Batch ID	1		10	309	J					426.00		.6610	3.00	
	02		A Batch ID	1		20	309	J					2213 .00		2.5305	56.00	

26c. SHIPPER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

27c. RECEIVER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

27. RECEIVER'S DATA

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

This data is combined with Examples 3a, 3c, and 3d for one electronic file submission shown on page 35.

Example 3c

DOE/NRC FORM 740M (5-2000)
Previous editions are obsolete
MANDATORY DATA REQUIRED BY 10 CFR 110, 40, 50, 70, 72, 74, 75, 150
AUTHORIZED BY 10 CFR 110, 40, 50, 70, 72, 74, 75, 150
Public Law 83-703, 93-438, 95-91

U.S. DEPARTMENT OF ENERGY
AND
U.S. NUCLEAR REGULATORY COMMISSION

CONCISE NOTE

APPROVED BY OMB: NO. 3150-0005 EXPIRES: 05/31/2005

Estimated burden per response to comply with this mandatory collection request: 45 minutes. The information is required to satisfy the provisions of the US/IAEA Safeguards Agreement. Send comment regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0005), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. NAME
Advanced Physic

2. ATTACHMENT TO
☒ A. DOE/NRC 741 ☐ B. DOE/NRC 742 ☐ C. DOE/NRC 742c

3. RIS
A

4. REPORTING PERIOD
FROM TO

STREET ADDRESS
123 Anywhere Road

5. TRANSACTION DATA

A. SHIPPER'S R/B	B. RECEIVER'S R/B	C. TRANSFER NUMBER	D. CO/R.R. NUMBER	E. PC	F. AC
ABC	RGHI	10257		A	A

6. REPORTING DATE
12/31/2002

CITY
Commontown
STATE *ZA* ZIP CODE *11111*

7a. LINE NO.	7B. ENTRY REFERENCE	7C. TEXT OF CONCISE NOTE
01	Whole Report	Country of Oblig Code 32 Canada BL18
02	Whole Report	MBA Code UABC BL1
03	Whole Report	Batch ID -Any Batch Name- BL24d
04	Whole Report	Material Type Code BL24g as follows:
05	Whole Report	US material type 10 is IAEA code D
06	Whole Report	US material type 20 is IAEA code EG

To the best of my knowledge and belief, the information given above and in any attached documents is true, complete, and correct.

8. SIGNATURE (See instructions in [NUREG/BR-0006] for provisions regarding confidentiality.)
John Doe

9. TITLE
MC&A Representative

10. DATE
12/31/2002

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

This data is combined with Examples 3a, 3b, and 3d for one electronic file submission shown on page 35.

Example 3d

DOE/NRC FORM 741
(5-2002) Previous editions are obsolete
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150 Public Laws 83-703, 93-438, 95-91

U.S. DEPARTMENT OF ENERGY
AND
U.S. NUCLEAR REGULATORY COMMISSION

NUCLEAR MATERIAL TRANSACTION REPORT

1. SHIPPER'S RIS	2. RECEIVER'S RIS	3. TRANSACTION NO.	4. CORRECTION NO.	5. PROCESSING CODE a. SHIPPER	5. PROCESSING CODE b. RECEIVER	6. ACTION CODE a. SHIPPER	6. ACTION CODE b. RECEIVER
ABC	ABC	21229		A		M	

8a. NAME AND ADDRESS OF SHIPPER:
Advanced Physics
123 Anywhere Road
Commontown ZA 11111

10. NO. OF DATA LINES: 2

b. CONCISE NOTE ATTACHED ☐
c. IAEA REPORTABLE? ☐ YES ☐ NO

22. ACTION DATE	MONTH (MM)	DAY (DD)	YEAR (YYYY)
a. SHIPMENT	12	31	2002
b. SHIPPER'S CORRECTION			
c. RECEIPT			
d. RECEIVER'S MUF/S/R/D/F			
e. RECEIVER'S CORRECTION			

28. SHIPPER'S DATA

BACK REFERENCE a	LINE NO b	TYPE OF INV. CHANGE c	IDENTIFICATION d	NO. OF ITEMS e	PROJECT NUMBER f	MATERIAL TYPE g	COMPOSITION/FACILITY CODE h	OWNER CODE i	KEY MEAS. POINT j	MEAS. IDENT. k	GROSS WEIGHT l	NET WEIGHT m	ELEMENT WEIGHT n	ELEMENT LIMIT OF ERROR o	WEIGHT % ISOTOPE p	ISOTOPE WEIGHT q	ISOTOPE LIMIT OF ERROR r
	01	NP				20	309	J					536.00		1.8656	10.00	
	02	TN				50	309	J					71.00		72.325	16.00	

28c. SHIPPER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED
27c. RECEIVER'S DATA — SIGNATURE OF AUTHORIZED OFFICIAL AND DATE SIGNED

27. RECEIVER'S DATA

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

This data is combined with Examples 3a, 3b, and 3c for one electronic file submission shown on page 35.

80 Column format:

Example 3 a, b, c, d Submission of Multiple Transactions including Concise Notes

```
                    1                   2                   3                   4                   5                   6                   7                   8
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0

ABC DEF    1311A B100                                                                                                  12312002
ABC RGHI 10257 A A102                                                                                                  12312002
ABC RGHI 10257 A A201                                1                  10309   J
ABC RGHI 10257 A A501                                            42000          6610          300
ABC RGHI 10257 A A202                                1                  20309   J
ABC RGHI 10257 A A502                                         221300          25305          5600
ABC RGHI 10257 A A3 GEN-LIC
ABC RGHI 10257 A A4                                                                    58499
ABC RGHI 10257 A A70110          42600                    32
ABC RGHI 10257 A A70220        221300               560032
ABC RGHI 10257 A A6WHOLEREPORT       01 COUNTRY OF OBLIG CODE 32 CANADA BL18
ABC RGHI 10257 A A6WHOLEREPORT       02 MBA CODE UABC BL1
ABC RGHI 10257 A A6WHOLEREPORT       03 BATCH ID -ANY BATCH NAME- BL24D
ABC RGHI 10257 A A6WHOLEREPORT       04 MATERIAL TYPE CODE BL24G AS FOLLOWS
ABC RGHI 10257 A A6WHOLEREPORT       05 US MATERIAL TYPE 10 IS IAEA CODE D
ABC RGHI 10257 A A6WHOLEREPORT       06 US MATERIAL TYPE 20 IS IAEA CODE EG
ABC ABC  21229 A M102                                                                                                  12312002
ABC ABC  21229 A M201NP                              20309   J
ABC ABC  21229 A M501                                53600          18656          1000
ABC ABC  21229 A M202TN                                    50309   J
ABC ABC  21229 A M502                                      7100          723250          1600
```

XML format:

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NATUREOFTRANSACTION="" SHIPPEDFORRIS="" SHIPPEDTORIS="" TRANSFERAUTHORITY=""
UKFLAG="" ACTIONDATE="12312002" LICENSENUMBER="" TOTALGROSSWEIGHT=""
TOTALVOLUME="" CONCISENOTEIND="" SEALEDSOURCE="" TOTRANSFERAUTHORITY="">
 </SHIPMENT>
 <SHIPMENT SHIPPERRIS="ABC" RECEIVERRIS="RGHI" TRANSFERNUMBER="10257"
CORRECTION="" PROCESSCODE="A" ACTIONCODE="A" NUMBEROFLINES="3"
NATUREOFTRANSACTION="" SHIPPEDFORRIS="" SHIPPEDTORIS="" TRANSFERAUTHORITY=""
UKFLAG="" ACTIONDATE="12312002" LICENSENUMBER="GEN-LIC"
TOTALGROSSWEIGHT="58499" TOTALVOLUME="" CONCISENOTEIND="X" SEALEDSOURCE=""
TOTRANSFERAUTHORITY="">
   <CONCISENOTE LINENUMBER="1" ENTRYREFERENCE="Whole Report"
TEXTOFCONCISENOTE="Country of Oblig Code 32 Canada BL18">
   </CONCISENOTE>
   <CONCISENOTE LINENUMBER="2" ENTRYREFERENCE="Whole Report"
TEXTOFCONCISENOTE="MBA Code UABC BL1">
   </CONCISENOTE>
   <CONCISENOTE LINENUMBER="3" ENTRYREFERENCE="Whole Report"
TEXTOFCONCISENOTE="Batch ID -Any Batch Name- BL24d">
   </CONCISENOTE>
   <CONCISENOTE LINENUMBER="4" ENTRYREFERENCE="Whole Report"
TEXTOFCONCISENOTE="Material Type Code BL24g as follows">
   </CONCISENOTE>
   <CONCISENOTE LINENUMBER="5" ENTRYREFERENCE="Whole Report"
TEXTOFCONCISENOTE="US material type 10 is IAEA code D">
   </CONCISENOTE>
   <CONCISENOTE LINENUMBER="6" ENTRYREFERENCE="Whole Report"
TEXTOFCONCISENOTE="US material type 20 is IAEA code EG">
   </CONCISENOTE>
   <OBLIGATION LINENUMBER="1" COUNTRYCODE="32" SUMMARYMATERIALTYPE="10"
ELEMENT WEIGHT="42600" ISOTOPE WEIGHT="">
   </OBLIGATION>
   <OBLIGATION LINENUMBER="2" COUNTRYCODE="32" SUMMARYMATERIALTYPE="20"
ELEMENT WEIGHT="221300" ISOTOPE WEIGHT="5600">
   </OBLIGATION>
```

```
    <LINEITEM BACKREFLINENUMBER="" LINENUMBER="1" BATCH="" NUMBEROFITEMS="-1">
      <ELEMENT ELEMENTWEIGHT="42000" ELEMENTLOE="">
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TYPEINVENTORYCHANGE="" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="" NETWEIGHT=""
TOPROJECT="" TOCOEILINENUMBER="">
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      </ELEMENT>
    </LINEITEM>
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OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="" NETWEIGHT=""
TOPROJECT="" TOCOEILINENUMBER="">
          <ISOTOPE WEIGHTPERCENT="25305" ISOTOPEWEIGHT="5600" ISOTOPELOE="">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
  </SHIPMENT>
  <SHIPMENT SHIPPERRIS="ABC" RECEIVERRIS="ABC" TRANSFERNUMBER="21229"
CORRECTION="" PROCESSCODE="A" ACTIONCODE="M" NUMBEROFLINES="2"
NATUREOFTRANSACTION="" SHIPPEDFORRIS="" SHIPPEDTORIS="" TRANSFERAUTHORITY=""
UKFLAG="" ACTIONDATE="12312002" LICENSENUMBER="" TOTALGROSSWEIGHT=""
TOTALVOLUME="" CONCISENOTEIND="" SEALEDSOURCE="" TOTRANSFERAUTHORITY="">
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    </CONCISENOTE>
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WEIGHT="" ISOTOPE WEIGHT="">
    </OBLIGATION>
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      <ELEMENT ELEMENTWEIGHT="53600" ELEMENTLOE="">
        <MATERIAL SUMMARYMATERIALTYPE="20" PROJECT="" COEILINENUMBER="309"
TYPEINVENTORYCHANGE="NP" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="" NETWEIGHT=""
TOPROJECT="" TOCOEILINENUMBER="">
          <ISOTOPE WEIGHTPERCENT="18656" ISOTOPEWEIGHT="1000" ISOTOPELOE="">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
    <LINEITEM BACKREFLINENUMBER="" LINENUMBER="2" BATCH="" NUMBEROFITEMS="">
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TYPEINVENTORYCHANGE="TN" OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS=""
OTHERMEASUREPOINT="" MEASUREMETHOD="" GROSSWEIGHT="" NETWEIGHT=""
TOPROJECT="" TOCOEILINENUMBER="">
          <ISOTOPE WEIGHTPERCENT="723250" ISOTOPEWEIGHT="1600" ISOTOPELOE="">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
  </SHIPMENT>
</TRANSACTION>
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Example 4
Physical Inventory Listing

DOE/NRC FORM 742C
(5-2002)
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150
Public Law 83-703, 93-438, 95-91

U.S. DEPARTMENT OF ENERGY
AND
U.S. NUCLEAR REGULATORY COMMISSION

PHYSICAL INVENTORY LISTING

APPROVED BY OMB: NO. 3150-0003 EXPIRES 05/31/2005

Estimated burden per response to comply with this mandatory collection request: 6 hours. This information is required by NRC to fulfill its safeguards responsibilities, bilateral agreements, and responsibilities as a participant in the US/IAEA Safeguards Agreement. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0003), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. NAME: *Advanced Physics*

STREET ADDRESS: *123 Anywhere Road*

CITY: *Commontown* | STATE: *ZA* | ZIP CODE: *11111*

2. DOE/NRC FORM 740M ATTACHED: ☐ YES ☐ NO

3. REPORTING IDENTIFICATION SYMBOL (RIS): ABC

4. INVENTORY DATE: 12/31/2002

5. PROCESS CODE:

6. CORRECTION I.D.:

7. LICENSE NUMBER(S):

8. BATCH DATA

a. MATERIAL TYPE	b. COMP./FAC CODE	c. ELEMENT WEIGHT	d. ISOTOPE WEIGHT	e. DOE PROJECT NO.	f. SCRAP PROGRAM	g. WEIGHT PERCENT ISOTOPE	h. OWNER CODE	i. SEQUENCE NUMBER	j. BATCH NAME	k. NO. OF ITEMS	l. KEY MEASURE POINT	m. MEASUREMENT I.D. MEAS. BASIS	m. MEASUREMENT I.D. OTHER MEAS. POINT	m. MEASUREMENT I.D. MEAS. METHOD	n. ENTRY STATUS	o. MBA	p. SITE IDC
E1	F02	99	18				J	1									
E1	771	1	1				J	2									
E1	771	45	12				J	3									
E1	771	65	20				J	4									
9. TOTALS		210	51					5									

To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

10. SIGNATURE (See instructions for provisions regarding confidentiality.): *John Doe*

11. TITLE: MC&A Representative

12. DATE: 12/31/2002

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

80 Column format:

Example 4 Physical Inventory Listing

```
1123120002ABC  E1F02        9900            1800                J          00001
1123120002ABC  E1771         100             100                J          00002
1123120002ABC  E1771        4500            1200                J          00003
1123120002ABC  E1771        6500            2000                J          00004
1123120002ABC  20899       21000            5100                           00005
```

XML format:

```
<PHYSICALINVENTORY>
 <INVENTORY RIS="ABC" DATE="12312002" CONCISENOTEIND="">
  <LINEITEM LINENUMBER="1" NUMBEROFITEMS="" BATCH="">
   <ELEMENT ELEMENTWEIGHT="9900">
    <MATERIAL SUMMARYMATERIALTYPE="E1" PROJECT="" COEILINENUMBER="F02"
OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS="" OTHERMEASUREPOINT=""
MEASUREMETHOD="" SCRAPPROGRAM="" ENTRYSTATUS="">
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     </ISOTOPE>
    </MATERIAL>
   </ELEMENT>
  </LINEITEM>
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   <ELEMENT ELEMENTWEIGHT="100">
    <MATERIAL SUMMARYMATERIALTYPE="E1" PROJECT="" COEILINENUMBER="771"
OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS="" OTHERMEASUREPOINT=""
MEASUREMETHOD=""SCRAPPROGRAM="" ENTRYSTATUS="">
     <ISOTOPE WEIGHTPERCENT="" ISOTOPEWEIGHT="100">
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   </ELEMENT>
  </LINEITEM>
  <LINEITEM LINENUMBER="3" NUMBEROFITEMS="" BATCH="">
   <ELEMENT ELEMENTWEIGHT="4500">
    <MATERIAL SUMMARYMATERIALTYPE="E1" PROJECT="" COEILINENUMBER="771"
OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS="" OTHERMEASUREPOINT=""
MEASUREMETHOD=""SCRAPPROGRAM="" ENTRYSTATUS="">
     <ISOTOPE WEIGHTPERCENT="" ISOTOPEWEIGHT="1200">
     </ISOTOPE>
    </MATERIAL>
   </ELEMENT>
  </LINEITEM>
  <LINEITEM LINENUMBER="4" NUMBEROFITEMS="" BATCH="">
   <ELEMENT ELEMENTWEIGHT="6500">
    <MATERIAL SUMMARYMATERIALTYPE="E1" PROJECT="" COEILINENUMBER="771"
OWNER="J" KEYMEASUREPOINT="" MEASUREBASIS="" OTHERMEASUREPOINT=""
MEASUREMETHOD=""SCRAPPROGRAM="" ENTRYSTATUS="">
     <ISOTOPE WEIGHTPERCENT="" ISOTOPEWEIGHT="2000">
     </ISOTOPE>
    </MATERIAL>
   </ELEMENT>
  </LINEITEM>
  <LINEITEM LINENUMBER="5" NUMBEROFITEMS="" BATCH="">
   <ELEMENT ELEMENTWEIGHT="21000">
    <MATERIAL SUMMARYMATERIALTYPE="20" PROJECT="" COEILINENUMBER="899"
OWNER="" KEYMEASUREPOINT="" MEASUREBASIS="" OTHERMEASUREPOINT=""
MEASUREMETHOD="" SCRAPPROGRAM="" ENTRYSTATUS="">
     <ISOTOPE WEIGHTPERCENT="" ISOTOPEWEIGHT="5100">
     </ISOTOPE>
```

```
      </MATERIAL>
    </ELEMENT>
  </LINEITEM>
 </INVENTORY>
</PHYSICALINVENTORY>
```

Example 5
Physical Inventory Listing for selected IAEA facilities.

DOE/NRC FORM 742C
(5-2002)
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150
Public Law 83-703, 93-438, 95-91

U.S. DEPARTMENT OF ENERGY
AND
U.S. NUCLEAR REGULATORY COMMISSION

PHYSICAL INVENTORY LISTING

APPROVED BY OMB: NO. 3150-0003 EXPIRES 05/31/2005

Estimated burden per response to comply with this mandatory collection request: 6 hours. This information is required by NRC to fulfill its safeguards responsibilities, bilateral agreements, and responsibilities as a participant in the US/IAEA Safeguards Agreement. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0003), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. NAME: *Advanced Physics*
STREET ADDRESS: *123 Anywhere Road*
CITY: *Commontown* | STATE: *ZA* | ZIP CODE: *11111*

2. DOE/NRC FORM 740M ATTACHED: ☐ YES ☐ NO

3. REPORTING IDENTIFICATION SYMBOL (RIS): ABC

4. INVENTORY DATE: 12/31/2002

5. PROCESS CODE

6. CORRECTION I.D.

7. LICENSE NUMBER(S)

8. BATCH DATA

a. MATERIAL TYPE	b. COMP./FAC CODE	c. ELEMENT WEIGHT	d. ISOTOPE WEIGHT	e. DOE PROJECT NO.	f. SCRAP PROGRAM	g. WEIGHT PERCENT ISOTOPE	h. OWNER CODE	i. SEQUENCE NUMBER	j. BATCH NAME	k. NO. OF ITEMS	l. KEY MEASURE POINT	m. MEASUREMENT I.D. MEAS. BASIS	m. MEASUREMENT I.D. OTHER MEAS. POINT	m. MEASUREMENT I.D. MEAS. METHOD	n. ENTRY STATUS	o. MBA	p. SITE IDC
33	771	155	112				J	1	Batch0422	10	02	N			N		
9. TOTALS																	

To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

10. SIGNATURE (See instructions for provisions regarding confidentiality.): *John Doe*

11. TITLE: MC&A Representative

12. DATE: 12/31/2002

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

80 Column format:

Example 5 Physical Inventory Listing for selected IAEA facilities.

```
         1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890

112312002ABC 33771          15500          11200                  J     00001
212312002ABC 33771 BATCH0422          10   O2N    N               J     00001
```

XML format:

```
<PHYSICALINVENTORY>
 <INVENTORY RIS="ABC" DATE="12312002" CONCISENOTEIND="">
  <LINEITEM LINENUMBER="1" NUMBEROFITEMS="10" BATCH="Batch0422">
   <ELEMENT ELEMENTWEIGHT="15500">
    <MATERIAL SUMMARYMATERIALTYPE="33" PROJECT="" COEILINENUMBER="771"
OWNER="J" KEYMEASUREPOINT="02" MEASUREBASIS="N" OTHERMEASUREPOINT=""
MEASUREMETHOD="" SCRAPPROGRAM="" ENTRYSTATUS="N">
     <ISOTOPE WEIGHTPERCENT="" ISOTOPEWEIGHT="11200">
     </ISOTOPE>
    </MATERIAL>
   </ELEMENT>
  </LINEITEM>
 </INVENTORY>
</PHYSICALINVENTORY>
```

Example 6
Physical Inventory Listing reporting total lines.

DOE/NRC FORM 742C
(5-2002)
MANDATORY DATA COLLECTION
AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150
Public Laws 83-703, 93-438, 95-91

U.S. DEPARTMENT OF ENERGY
AND
U.S. NUCLEAR REGULATORY COMMISSION

PHYSICAL INVENTORY LISTING

APPROVED BY OMB: NO. 3150-0003 EXPIRES 05/31/2005
Estimated burden per response to comply with this mandatory collection request: 6 hours. This information is required by NRC to fulfill its safeguards responsibilities, bilateral agreements, and responsibilities as a participant in the US/IAEA Safeguards Agreement. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington DC 20555-0001, or by internet email to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0003), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor and a person is not required to respond to the information collection.

1. NAME: *Advanced Physics*
STREET ADDRESS: *123 Anywhere Road*
CITY: *Commontown,* STATE: *ZA* ZIP CODE: *11111*

2. DOE/NRC FORM 740M ATTACHED ☐ YES ☐ NO
3. REPORTING IDENTIFICATION SYMBOL (RIS): ABC
4. INVENTORY DATE: 12/31/2002
5. PROCESS CODE:
6. CORRECTION I.D.:
7. LICENSE NUMBER(S):

8. BATCH DATA

a. MATERIAL TYPE	b. COMP/FAC CODE	c. ELEMENT WEIGHT	d. ISOTOPE WEIGHT	e. DOE PROJECT NO.	f. SCRAP PROGRAM	g. WEIGHT PERCENT ISOTOPE	h. OWNER CODE	i. SEQUENCE NUMBER	j. BATCH NAME	k. NO. OF ITEMS	l. KEY MEASURE POINT	m. MEASUREMENT I.D. MEAS. BASIS	m. OTHER MEAS. POINT	m. MEAS. METHOD	n. ENTRY STATUS	o. MBA	p. SITE IDC
20	899																
9. TOTALS		155	112					1									

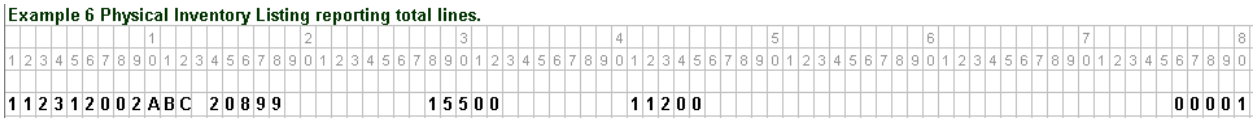
To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

10. SIGNATURE (See instructions for provisions regarding confidentiality.): *John Doe*
11. TITLE: MC&A Representative
12. DATE: 12/31/2002

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

80 Column format:

Example 6 Physical Inventory Listing reporting total lines.



XML format:

```
<PHYSICALINVENTORY>
  <INVENTORY RIS="ABC" DATE="12312002" CONCISENOTEIND="">
    <LINEITEM LINENUMBER="1" NUMBEROFITEMS="" BATCH="">
      <ELEMENT ELEMENTWEIGHT="15500">
        <MATERIAL SUMMARYMATERIALTYPE="20" PROJECT="" COEILINENUMBER="899"
OWNER="" KEYMEASUREPOINT="" MEASUREBASIS="" OTHERMEASUREPOINT=""
MEASUREMETHOD="" SCRAPPROGRAM="" ENTRYSTATUS="">
          <ISOTOPE WEIGHTPERCENT="" ISOTOPEWEIGHT="11200">
          </ISOTOPE>
        </MATERIAL>
      </ELEMENT>
    </LINEITEM>
  </INVENTORY>
</PHYSICALINVENTORY>
```

Example 7a
Material Balance Report

:PARTMENT OF ENERGY
AND
R REGULATORY COMMISSION

AUTHORIZED BY 10 CFR 30, 40, 50, 70, 72, 74, 75, 150, Public Laws 93-703, 95-604, 95-91

MATERIAL BALANCE REPORT

APPROVED BY OMB: NO.3150-0004 EXPIRES: 08/31/2003
Estimated burden per response to comply with this mandatory collection request 45 minutes. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0003), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to the information collection.

1. NAME AND ADDRESS	2. LICENSE NUMBER(S)		3. REPORTING IDENTIFICATION SYMBOL (RIS)
Advanced Physics *123 Anywhere Road* *Commontown, ZA 11111*			ABC
	4. REPORT PERIOD		5. MATERIAL TYPE (Submit separate report for each type)
6a. PROCESS CODE / b. CORRECTION I.D.	FROM 01/01/2002	TO 12/31/2002	20

SECTION A — MATERIAL ACCOUNTABILITY		A. ELEMENT WEIGHT	B. ISOTOPE WEIGHT
7. DOE/NRC 740M ATTACHED ☐ YES ☒ NO			
8. BEGINNING INVENTORY - U.S. GOVT-OWNED			
9. BEGINNING INVENTORY - NOT U.S. GOVT-OWNED			
RECEIPTS			
11. PROCUREMENT FROM DOE/NNSA			
FROM:	RIS DEF	11207.00	1112.00
13. PROCUREMENT - FOR THE ACCOUNT OF DOE/NNSA			
14. DOD RETURNS - USE A			
15. DOD RETURNS - USE B			
16. DOD RETURNS - OTHER USES			
21. PRODUCTION			
22. FROM OTHER MATERIALS	a. ICT		
	b. ICT		
	c. ICT		
30. RECEIPTS REPORTED TO DOE/NRC ON DOE/NRC 741 (*Not listed elsewhere*)			
FROM:	RIS GHI	38.00	25.00
34. RECEIPTS - MISC			
37. PROCUREMENT BY OTHERS			
38. DONATED MATERIAL - FROM U.S. GOVT			
39. DONATED MATERIAL - FROM OTHERS TO U.S. GOVT			
40. TOTAL (*Lines 8 - 39*)			
REMOVALS			
41. EXPENDED IN SPACE PROGRAMS			
42. SALES TO U.S. GOVT RIS TO:			
TO:	RIS		
43. SALES TO OTHERS FOR THE ACCOUNT OF U.S.GOVT			
TO:	RIS		
44. DOD - USE A			
45. DOD - USE B			
46. DOD - OTHER USES		2.0	1.0
47. EXPENDED IN U.S.GOVT TESTS			
48. ROUTINE TESTS			
49. SHIPPER - RECEIVER DIFFERENCE			
51. SHIPMENTS REPORTED TO DOE/NRC ON DOE/NRC 741 (*not listed elsewhere*)			
TO:	RIS		
54. SHIPMENTS - MISC			
58. DONATED MATERIAL - TO U.S.GOVT BY			
59. DONATED MATERIAL - TO OTHERS BY			
65. ROUNDING BIAS			
71. DEGRADATION TO OTHER MATERIALS	a. ICT		
	b. ICT		
72. DECAY			
73. FISSION AND TRANSMUTATION			
74. NORMAL OPERATIONAL LOSSES/MEASURED DISCARDS			
75. ACCIDENTAL LOSSES			
76. APPROVED WRITE-OFFS			
77. INVENTORY DIFFERENCE			
80. ENDING INVENTORY - U.S.GOVT OWNED			
81. ENDING INVENTORY - NOT U.S.GOVT OWNED		11243	1136
82. TOTAL (*Lines 41 - 81*)			
83. BIAS JUDGEMENT			

SECTION B — FOREIGN OBLIGATIONS		
1. COUNTRY CODE OF OBLIGATION	2. ELEMENT WEIGHT	3. ISOTOPE WEIGHT
4. TOTAL WEIGHT		

SECTION C — CERTIFICATION

To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

SIGNATURE (See instructions for provisions regarding confidentiality.)	TITLE	DATE
John Doe	MC&A Representative	12/31/2002

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTERS WITHIN ITS JURISDICTION.

This data is combined with Example 7b for one electronic file submission shown on page 46.

Example 7b
Material Balance Report

EPARTMENT OF ENERGY
AND
R REGULATORY COMMISSION

10 CFR 30, 40, 50, 70, 72, 74, 75, 150, Public Laws 93-703, 95-438, 95-91

MATERIAL BALANCE REPORT

APPROVED BY OMB: NO.3150-0004 EXPIRES: 08/31/2003
Estimated burden per response to comply with this mandatory collection request 45 minutes. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0003), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to the information collection.

1. NAME AND ADDRESS	2. LICENSE NUMBER(S)	3. REPORTING IDENTIFICATION SYMBOL (RIS)
Advanced Physics *123 Anywhere Road* *Commontown, ZA 11111*		ZZZ
	4. REPORT PERIOD FROM: 01/01/2002 TO: 12/31/2002	5. MATERIAL TYPE (Submit separate report for each type): E4
6a. PROCESS CODE	b. CORRECTION I.D.	

SECTION A — MATERIAL ACCOUNTABILITY		A. ELEMENT WEIGHT	B. ISOTOPE WEIGHT
7. DOE/NRC 740M ATTACHED ☐ YES ☒ NO			
8. BEGINNING INVENTORY - U.S. GOVT-OWNED			
9. BEGINNING INVENTORY - NOT U.S. GOVT-OWNED		800	300
RECEIPTS			
11. PROCUREMENT FROM DOE/NNSA			
FROM:	RIS		
13. PROCUREMENT - FOR THE ACCOUNT OF DOE/NNSA			
14. DOD RETURNS - USE A			
15. DOD RETURNS - USE B			
16. DOD RETURNS - OTHER USES			
21. PRODUCTION			
22. FROM OTHER MATERIALS	a. ICT ED	74.00	74.00
	b. ICT		
	c. ICT		
30. RECEIPTS REPORTED TO DOE/NRC ON DOE/NRC 741 (*Not listed elsewhere*)			
FROM:	RIS		
34. RECEIPTS - MISC			
37. PROCUREMENT BY OTHERS			
38. DONATED MATERIAL - FROM U.S. GOVT			
39. DONATED MATERIAL - FROM OTHERS TO U.S. GOVT			
40. TOTAL (*Lines 8 - 39*)			
REMOVALS			
41. EXPENDED IN SPACE PROGRAMS			
42. SALES TO U.S. GOVT RIS TO:			
TO:	RIS		
43. SALES TO OTHERS FOR THE ACCOUNT OF U.S.GOVT			
TO:	RIS		
44. DOD - USE A			
45. DOD - USE B			
46. DOD - OTHER USES			
47. EXPENDED IN U.S.GOVT TESTS			
48. ROUTINE TESTS			
49. SHIPPER - RECEIVER DIFFERENCE			
51. SHIPMENTS REPORTED TO DOE/NRC ON DOE/NRC 741 (*not listed elsewhere*)			
TO:	RIS		
54. SHIPMENTS - MISC			
58. DONATED MATERIAL - TO U.S.GOVT BY			
59. DONATED MATERIAL - TO OTHERS BY			
65. ROUNDING BIAS			
71. DEGRADATION TO OTHER MATERIALS	a. ICT		
	b. ICT		
72. DECAY			
73. FISSION AND TRANSMUTATION			
74. NORMAL OPERATIONAL LOSSES/MEASURED DISCARDS			
75. ACCIDENTAL LOSSES			
76. APPROVED WRITE-OFFS			
77. INVENTORY DIFFERENCE			
80. ENDING INVENTORY - U.S.GOVT OWNED			
81. ENDING INVENTORY - NOT U.S.GOVT OWNED		874	374
82. TOTAL (*Lines 41 - 81*)			
83. BIAS JUDGEMENT			

SECTION B — FOREIGN OBLIGATIONS		
1. COUNTRY CODE OF OBLIGATION	2. ELEMENT WEIGHT	3. ISOTOPE WEIGHT
86	320	20
4. TOTAL WEIGHT		

SECTION C — CERTIFICATION

To the best of my knowledge and belief, the information given above and in any attached schedules is true, complete, and correct.

SIGNATURE (See instructions for provisions regarding confidentiality.)	TITLE	DATE
John Doe	MC&A Representative	12/31/2002

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTERS WITHIN ITS JURISDICTION.

This data is combined with Example 7a for one electronic file submission shown on page 46.

80 Column format:

Example 7a & 7b Material Balance Report

```
3ABC 20010120002123120002                1120700                1112001 1DEF     N
3ABC 20010120002123120002                   3800                   25003 0GHI    N
4ABC 20010120002123120002                    200                    1004 6       N
4ABC 20010120002123120002                1124300                1136008 1       N
3ZZZ E401012000212312000 2                  80000                  3000000 9     N
3ZZZ E401012000212312000 2                   7400                   7400222   EDN
4ZZZ E401012000212312000 2                  87400                  3740081       N
4ZZZ E401012000212312000 2                  32000                   200086       N
```

XML format:

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  <MATERIALBALANCE RIS="ABC" STARTDATE="01012002" ENDDATE="12312002"
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      <ELEMENT ELEMENTWEIGHT="1120700" TYPEINVENTORYCHANGE="" OTHERRIS="DEF"
ENTRYSTATUS="N">
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      </ELEMENT>
    </LINEITEM>
    <LINEITEM DATACODE="3" SUMMARYMATERIALTYPE="20" MBC="30">
      <ELEMENT ELEMENTWEIGHT="3800" TYPEINVENTORYCHANGE="" OTHERRIS="GHI"
ENTRYSTATUS="N">
          <ISOTOPE ISOTOPEWEIGHT="2500">
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      </ELEMENT>
    </LINEITEM>
   <LINEITEM DATACODE="4" SUMMARYMATERIALTYPE="20" MBC="46">
      <ELEMENT ELEMENTWEIGHT="200" TYPEINVENTORYCHANGE="" OTHERRIS=""
ENTRYSTATUS="N">
          <ISOTOPE ISOTOPEWEIGHT="100">
          </ISOTOPE>
      </ELEMENT>
    </LINEITEM>
    <LINEITEM DATACODE="4" SUMMARYMATERIALTYPE="20" MBC="81">
      <ELEMENT ELEMENTWEIGHT="1124300" TYPEINVENTORYCHANGE="" OTHERRIS=""
ENTRYSTATUS="N">
          <ISOTOPE ISOTOPEWEIGHT="113600">
          </ISOTOPE>
      </ELEMENT>
    </LINEITEM>
  </MATERIALBALANCE>
  <MATERIALBALANCE RIS="ZZZ" STARTDATE="01012002" ENDDATE="12312002"
CONCISENOTEIND="">
    <LINEITEM DATACODE="3" SUMMARYMATERIALTYPE="E4" MBC="09">
      <ELEMENT ELEMENTWEIGHT="80000" TYPEINVENTORYCHANGE="" OTHERRIS=""
ENTRYSTATUS="N">
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      </ELEMENT>
    </LINEITEM>
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      <ELEMENT ELEMENTWEIGHT="7400" TYPEINVENTORYCHANGE="34" OTHERRIS="">
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    </LINEITEM>
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    <LINEITEM DATACODE="4" SUMMARYMATERIALTYPE="E4" MBC="81">
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ENTRYSTATUS="N">
          <ISOTOPE ISOTOPEWEIGHT="37400">
          </ISOTOPE>
      </ELEMENT>
    </LINEITEM>
    <LINEITEM DATACODE="4" SUMMARYMATERIALTYPE="E4" MBC="86">
      <ELEMENT ELEMENTWEIGHT="32000" TYPEINVENTORYCHANGE="" OTHERRIS=""
ENTRYSTATUS="N">
          <ISOTOPE ISOTOPEWEIGHT="2000">
          </ISOTOPE>
      </ELEMENT>
    </LINEITEM>
  </MATERIALBALANCE>
</MATERIALBALANCEREPORT>
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